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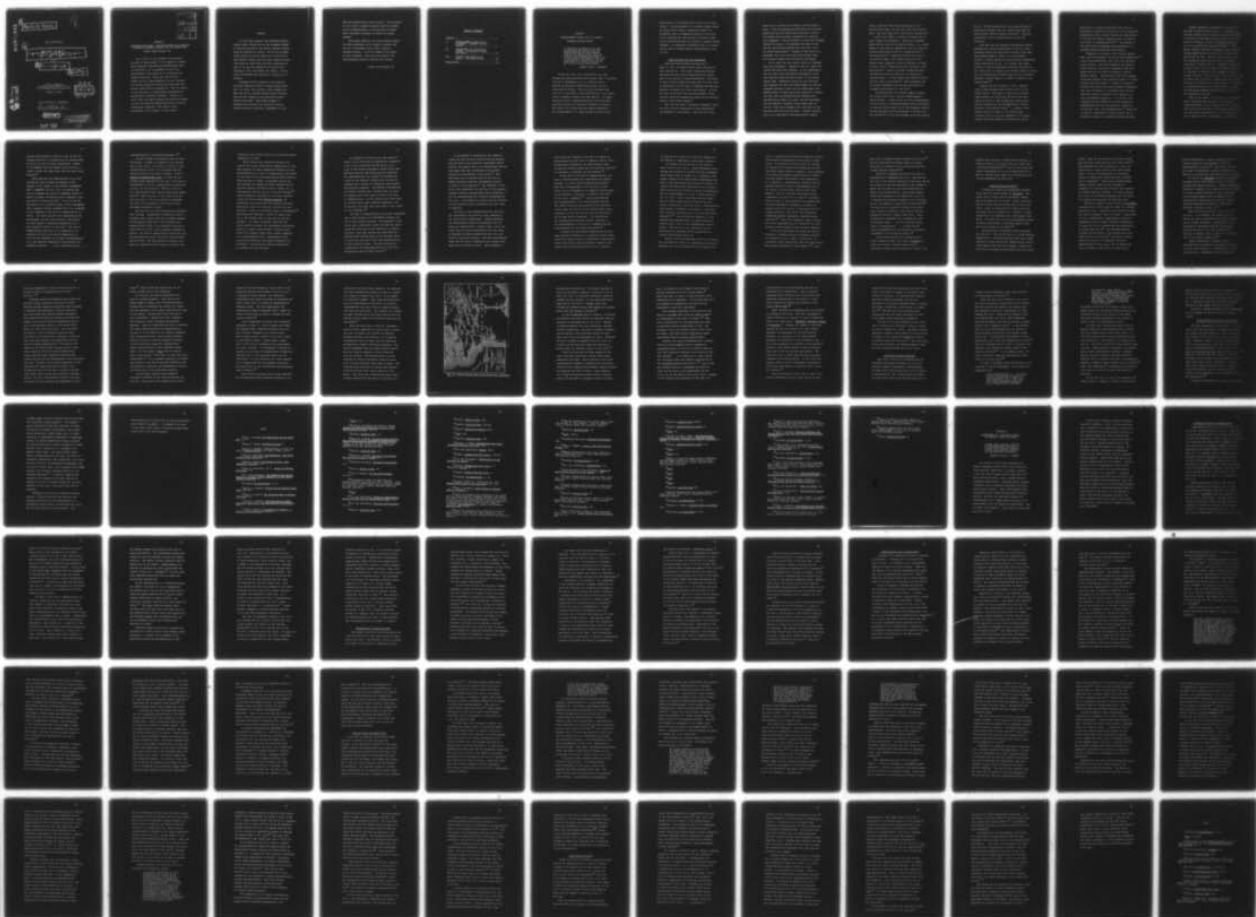
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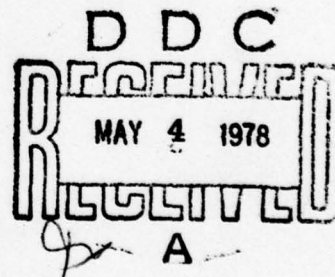
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ABSTRACT

DELIVERING THE GOODS: THE DEVELOPMENT OF AN AMERICAN LOGISTICAL SYSTEM IN FRANCE, MAY 1917-MARCH 1918

Robert Dewey Ramsey, III

By a review of the documents and personal accounts of participants in the logistical system which supported the American Expeditionary Force in World War I, it is possible to trace the development of the system and to determine why changes were made. Entry into the war had caught the U.S. Army unprepared for war overseas. Its initial logistical system was based upon the pre-war Field Service Regulations. Once in France, it was necessary to modify these regulations in dealing with conditions overseas. Finally, in early 1918, the entire system was radically changed so that the American Expeditionary Force could be continuously supported. The story of this development is the subject of this thesis.

PREFACE

In 1937 Major General John Frederick Charles Fuller wrote, "Surely one of the strangest things in military history is the almost complete silence upon the problems of supply. Not in ten thousand books written on war is there to be found one on the subject" despite the fact that logistics forms "the basis on which rests the whole structure of war; it is the very foundation of Tactics and Strategy." Yet, even today, the study of tactics still overshadows the importance of logistics in warfare.

Although official studies of the American military logistical effort in France during World War I do exist, they provide little insight into what the actual problems facing General Pershing were and why changes in the logistical organizations were made. This study attempts to emphasize the crucial role logistical factors played during the World War I deployment of the

American Expeditionary Force (A.E.F.). The evolution of the A.E.F.'s support structure from its initial Line of Communications to the Services of Supply shows Pershing's attempts to master the supply problem.

This paper could not have been written without the kind assistance of Dr. Frank E. Vandiver and the use of documents on the A.E.F. from his personal library. A note of thanks to my family is also necessary. They were very patient and understanding during my research and writing.

Robert Dewey Ramsey III

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CHAPTER I

ESTABLISHMENT OF THE A.E.F. IN FRANCE:

PLANNING FOR THE FUTURE

It required no genius to see that coordination and direction of the combat branches and the numerous services of larger forces could be secured only through the medium of a well-constructed general staff, and I determined to construct it on the sound basis of actual experience in war of our own and other armies.

GENERAL JOHN J. PERSHING

On May 10, 1917, over a month after war with Germany had been declared, Major General John J. Pershing arrived in Washington, D.C., to learn he was to command the American Expeditionary Force (A.E.F.) being sent to France. Later he would describe this force as "a theoretical army which had yet to be constituted, equipped, trained, and sent abroad." In organizing the A.E.F., Pershing placed his first priority upon the selection of qualified officers to serve on his staff. His second task was equally important: the establishment of a supply system in France which

would serve as an integral part of the A.E.F.'s war effort.¹ The development of a reliable supply system in France would occupy a significant portion of Pershing's time as Commander-in-Chief of the A.E.F. for he realized that the success or failure of the A.E.F. would depend upon its ability to support itself overseas. To appreciate Pershing's task it is necessary to look at United States' preparedness for war in 1917.

America Enters the War Unprepared

When the United States declared war on April 6, 1917, the United States Army consisted of only 127,588 men. The 66,594 federalized National Guardsmen who had served along the Mexican border were in the process of being demobilized. The nature of their service along the border was of little value as preparation for the type of fighting that had been going on in Europe for almost three years. In fact, the size of the army "was scarcely enough to form a police force for emergencies within the territorial limits of the United States."²

Not only was there a shortage of manpower, there was also a lack of experience in the organization and handling of large units. Divisions and corps,

which were in common use in France, existed only on paper. Since the Spanish-American War, most military operations had been small-scale exercises in which the largest units normally assembled for training were regiments. The two attempts to form full strength "modern" divisions - the Maneuver Division in 1911 and the 2nd Division between 1913 and 1915 - fell far below expectations.³ Because of the lack of experience, the A.E.F. was built upon pre-war ideas and lessons learned from the British and French.

As is often the case, paper armies are equipped with paper equipment. Weapons in the U.S. Army were limited and most were outdated. At the beginning of the war there were only 285,000 Springfield rifles and about 400 light artillery pieces in the United States Army. Ammunition stocks for the artillery were adequate for what Sir Douglas Haig, the British Commander-in-Chief, would call an exploratory regimental attack of about nine hours duration.⁴ Despite the fact that the machine gun had dominated the battlefield in France for years, the War Department had not adopted a standard issue machine gun for the U.S. Army until December 1916, and when war was declared none had been delivered. Instead, machine gun stocks consisted of 670 Benet-Mercie machine

rifles, 282 model 1904 Maxim machine guns, 353 British Lewis guns, and 148 model 1895 Colt machine guns. The Lewis guns fired only British ammunition.⁵

Other items vital to warfare in Europe were in short supply or nonexistent. Tanks and poisonous gases did not exist in the United States. As a consequence of the Punitive Expedition, the U.S. Army did possess 2,400 motor trucks for transportation of men and material.⁶ American aviation was still in a primitive stage. The Aviation Section of the Signal Corps consisted of only 65 officers, of whom 35 were rated as "Flying Officers," and about 1,000 enlisted men.⁷ Only 55 aircraft existed and when the National Advisory Committee for Aeronautics examined them, 51 of the planes were judged obsolete and the other 4 obsolescent.⁸ These shortages led to initial dependence upon Britain and France for equipment and supplies for the A.E.F.

Considering that war had been waged in Europe for almost three years, American unpreparedness seems amazing. A major reason for this unpreparedness was the policy of President Woodrow Wilson who wanted to keep the United States out of the European conflict. He had forbidden the War Department to discuss even the possibility of war with Germany, much less prepare

for it. Wilson believed that if no plans existed to intervene in Europe, then the chances were that the United States would not become involved.⁹ Such miscalculations led to needless waste of time and resources.

Even when war was declared, presidential actions hindered the initial preparations of the U.S. Army. President Wilson sent the Chief of Staff of the Army, Major General Hugh L. Scott, on a fact-finding mission to Russia during the crucial period immediately after declaration of war. As a result, the preparations of the War Department staff were directed by the Acting Chief of Staff, Major General Tasker H. Bliss, who was approaching retirement age, and his assistant, Brigadier General Francis J. Kernan, a member of the General Staff.¹⁰

Despite the Root Reforms of 1903, a general staff in the European sense did not exist in the United States. The Chief of Staff was a military administrator who supervised the day-to-day operations of the U.S. Army through the bureau chiefs and the planning for war through the War College Division of the General Staff.¹¹ A member of the General Staff for seven of its fourteen year existence prior to the war commented on its organization that "men without war experience, and in

imitation of a German system which they did not understand" replaced an already tested War Department organization which covered "exactly the same ground as the old one without changing a word or comma in its duties or responsibilities."¹² The demands of war would quickly highlight the inadequacies of a combined bureau and general staff system.

Organized as a bureau of the civilian government, the War Department was not an Army headquarters.¹³ Within this bureaucracy, there were five separate supply bureaus. They were headed by the Quartermaster General, the Chief of Engineers, the Chief Signal Officer, the Chief of Ordnance, and the Surgeon General. These bureaus were "five separate purchasing agencies with separate systems of finance, storage, and distribution." Within its sphere of action, each bureau felt itself largely independent. They were accustomed to performing their various functions without reference to one another or to other governmental agencies. As a result, they competed with one another for limited numbers of manufactured articles, raw material, industrial facilities, labor, and transportation.¹⁴ There was no central coordination of their efforts and no attempt to reduce the competition between bureaus.

Another problem in preparing for war was the shortage of General Staff officers. Although the National Defense Act of 1916 had increased the number of officers on the General Staff from 36 to 54, the number of officers on duty in Washington when war was to be declared was less than twenty.¹⁵ This number compares with the 650 general staff officers Germany began the war with and the 230 that Great Britain had in 1914. But the actual staff of the War College Division that did the war planning consisted of eleven officers. Emergency legislation passed in May, 1917, increased the General Staff to 91 officers, of which 47 were assigned to the War College Division. But the drain of qualified officers to France and to the A.E.F. reduced the War College Division to 24 officers by mid-September.¹⁶ Shortage of qualified officers and a high turn-over in the War Department hampered United States' efforts at the beginning of the war.

Even if the number of positions on the General Staff could have been increased, the number of trained officers to fill the positions was limited. Out of the 6,000 officers in the Regular Army, there were only about 200 graduates of the Command and Staff College at Fort Leavenworth, 31 graduates

of the old School of the Line, and less than 200 graduates of the Army War College.¹⁷ This shortage of trained officers and the confusion in the War Department led Colonel Robert L. Bullard to remark, "if we really have a great war, our War Department will quickly break down."¹⁸

When diplomatic relations were broken with Germany on February 3, 1917, the few strategic plans the War Department had made for war with Germany were general in nature, designed for the defense of the continental United States, and totally inappropriate to the situation. Plans had been drawn up in 1915 which contemplated the defense of the Atlantic coast against a German invasion. A second plan was begun on February 29, 1916, but it was not completed when the war began.¹⁹ Brigadier General Kernan had headed a board studying the requirements for war in Europe during November-December 1916, but the board was using pre-Verdun information.²⁰ The War Department had no plan to send an American force to Europe.

In retrospect, it is remarkable that so much was accomplished by the War Department considering the handicaps of President Wilson's policies, the absence of a Chief of Staff, the shortage of trained

General Staff officers, the lack of any useful plans, and the lack of coordination both within and without the War Department. The unpreparedness of the United States increased the difficulties that Pershing would have as A.E.F. commander.

Initial War Department Planning

Immediately after the United States entered the war, foreign military missions began to arrive in Washington. Britain's mission, headed by Arthur J. Balfour and Lieutenant General Bridges, arrived on April 20 to be followed on the 24th by the French mission under René Viviani and Marshal Joffre. Italian, Belgian, Russian and Rumanian missions soon followed. Basically the missions sought financial assistance from the United States, an immediate commitment of American forces to France and a voice in what the American war effort should be.²¹ In return, they provided first-hand advice to the War Department regarding actual wartime conditions in France.

After consulting with officers from the French Military Mission, the War College Division completed its study concerning the dispatch of an expeditionary force to France on May 10. But the lack of organ-

ization and training of the U.S. Army led the War College Division to recommend that an expeditionary force not be sent to France immediately. Rather, it recommended that the Regular Army be used as a cadre to train the large force that the draft would produce.²²

Realizing that the expeditionary force would probably be sent overseas in response to the appeals of the French, it was further recommended that a commander for the A.E.F. be selected and that he organize his staff for immediate travel to France to gather information and to organize a base upon which to build the A.E.F. To aid in the development of the logistical base, it was recommended that a general officer accompany the A.E.F. commander as the commander of the Line of Communications in France. His staff was not to be determined by the requirements for the first division, "but should be large enough to undertake preparations for a more extensive service of the rear." The Line of Communications staff was to be organized in accordance with the Field Service Regulations of 1914 and the commander was to make "recommendations as to the detailed organization and personnel and equipment required . . . after consultation with . . .

representatives of the French Government."²³

The War College recommendation had one major deficiency. It made no estimate of the eventual size of the A.E.F. As a matter of fact, it only stated that the A.E.F. will be larger than the initial division to be sent to France. Table 5, Tables of Organization, 1914, to which the War College study referred for the size of the Line of Communications (L.O.C.) organization is based upon a L.O.C. for one division. This is a force of over 900 personnel plus several specialized supply units.²⁴ Since the size of the total force was not projected, it was not possible to determine the size of the logistical staff which should accompany Pershing to France.

But time was too short and qualified personnel were lacking. Consequently, Pershing was able to assemble only a small staff which included members of the General Staff and of the technical and administrative staffs. No commander, much less a staff for the L.O.C., would accompany Pershing to France. The task of organizing the logistical base and equipping the A.E.F. would fall upon Pershing and his staff. The only guidance Pershing would have for organizing A.E.F. logistics would be the

expertise of his staff officers and the Field Service Regulations of 1914.

United States Army logistical doctrine was spelled out in the Field Service Regulations of 1914. What appeared in these regulations dealing with the administration of a line of communication was written in 1912 and 1913 by two young General Staff officers, Major William D. Conner, an engineer officer who had attended the Command and Staff College and the Army War College, and Major James A. Logan, Jr., a quartermaster officer who was at the War College.²⁵ Since nothing was available on Civil War practices except the multi-volume Official Records, the regulations were based upon the French system with which Major Logan was familiar, since he had just finished a course at the French School of Intendance.²⁶ The French had developed a system of supply similar to the Germans, but in some ways it was more flexible. As combat in France stabilized and trench warfare evolved, the organization and maintenance of a supply system became a "logistician's dream" with regular supply lines, depots organized on a semi-permanent basis, requirements fairly accurate to calculate, and regular schedules for delivery.²⁷ But would the American regulations be suitable for war overseas?

As designed for American use, the system of supply of the Field Service Regulations visualized a war in the continental United States, or at least in the Western Hemisphere, based solely upon American resources and using American railroads. For administration, the country was divided into a Zone of the Interior controlled by the War Department and a Theater of Operations controlled by the military commander. The Theater of Operations was further divided into a Forward Zone, or Zone of Advance, and a Rear Zone, or Zone of the Line of Communications. In the Forward Zone there would be several armies under separate commanders, and in the Rear Zone each army would have a L.O.C. under its own commander.²⁸

The Line of Communications was further subdivided into a Base Section, an Intermediate Section, and one or more Advance Sections. The commander of the L.O.C. had a staff with a chief of staff and representatives from each of the technical, or supply, services. Each Base Section was controlled by a General Staff officer known as an assistant chief of staff who also had a staff with representatives of the technical staffs. The Base Section was commanded by the Commanding General of the L.O.C. through this General Staff officer.²⁹

In the Theater of Operations, the scheme of supply was that the Base Section received supplies from the Zone of the Interior (continental United States) and shipped them to the Intermediate Section from where they were re-shipped to the Advance Section for distribution at the front.³⁰ Only when there was no storage space at the Base or Advance Sections would the Intermediate Section be used to store supplies.³¹ The commander of the L.O.C. was responsible for the flow of the supplies - receipt, storage, transportation and distribution - and for administering the territory encompassed by the L.O.C. Procurement of supplies was the function of that technical chief responsible for each class of supplies.

Division of the responsibility for railroads and construction constituted a basic weakness of the Field Service Regulations. During peacetime, the Quartermaster Corps was responsible for all modes of transportation - animal, motor, rail, and water; but upon the declaration of war, the Corps of Engineers assumed responsibility for the operation of railroads overseas. Both the Quartermaster Corps and the Corps of Engineers were charged with their own construction duties. This changing of

duties upon the outbreak of war led to a degree of unpreparedness by the Corps of Engineers and an "it's-your-problem" attitude by the Quartermaster Corps. In addition, neither agency had the technical expertise or experience to properly run the railways.³²

In the Zone of the Line of Communications, control of transportation and construction was further divided. The Field Service Regulations provided that rail transportation, from the ports to the front, was to be handled by an engineer officer known as the Director of Railways, a member of the staff of the L.O.C. commander.³³ Water transportation, the responsibility of the Army Transport Service, and animal and motor transportation were functions solely under the control of the Quartermaster representatives at the base section who were supervised by the Base Section commander. All construction was coordinated by the Base Section commander as the representative of the L.O.C. commander who had responsibility for all supply facilities.³⁴

Although the Field Service Regulations did provide the basic outline for a logistical system, there were still several areas of ill-defined responsibility which would lead to future problems. Moreover, the system had never been tested by the U.S. Army and

it remained to be seen if it would be adequate to the demands of supporting a large force overseas.

To prepare for the arrival of the advance party of the A.E.F. and to obtain information concerning the situation in France, the War Department cabled Major James A. Logan, Jr., co-author of the supply section of the Field Service Regulations and head of the American Military Mission to France, to consult with the French authorities and to solicit their ideas for the location of ports of debarkation and the establishment of a Line of Communications for the A.E.F. After consulting with the French General Staff, Logan replied on May 18 that the French visualized an "American Line of Communications from Bordeaux to Belfort, utilizing, if necessary, three lines of railroads which are at present least congested."³⁵ Port and railway congestion in the northern and southern parts of France limited potential A.E.F. ports to the southwestern coast of France. This was the first indication the War Department had regarding French capabilities to support logistically the A.E.F.

Another early War Department effort to ascertain the conditions in France was undertaken by the Chief Engineer who was now responsible for railways over-

seas. A commission was formed by Samuel M. Felton, the railroad representative of the Corps of Engineers. It consisted of Major William B. Parsons, an engineer with the New York Subway and the Cape Cod Canal; Major William J. Wilgus, a vice president of the New York Central; Captain Alvin B. Barber, the only Regular Army member of the commission; W. A. Garrett, a transportation official with the Baldwin Locomotive Works of Philadelphia; and R. St. Phalle, a motive power official also with Baldwin. The two civilians were given reserve commissions as majors for the trip.³⁶ Sailing to France on May 14, the commission was charged with securing information "relating to possible assistance from this country in connection with the railway service of the Allies" and information "regarding engineer equipment, organization and training."³⁷ This first commission sent to France by the War Department was not interested in A.E.F. concerns, only problems facing the Chief Engineer.

As the War Department was making its initial estimates, Pershing was busy collecting personnel to comprise his A.E.F. staff. On May 22 he received his verbal instructions from President Wilson who promised Pershing his "full support."³⁸ Four

days later, Pershing assumed command of the A.E.F.³⁹
The War Department had decided that his initial force was to consist of the 1st Division and nine railway engineer regiments.⁴⁰

On May 27, Pershing received his written instructions for commanding the A.E.F. They were in the form of two letters bearing the same date, May 26. One letter was from the Secretary of War, Newton D. Baker and the other was from the Acting Chief of Staff, Major General Bliss. Both letters emphasized that Pershing was to command the A.E.F. as a "separate and distinct component of the combined force, the identity of which must be preserved."⁴¹ in other words, a separate American force which would require an American sector and an American logistical system to support that force. Baker considered it desirable that Pershing have made "a thorough study . . . of the available bases, lines of communication . . . so that you may direct preparations for the arrival of successive contingents of our troops in France."⁴²

On the next day, May 28, Pershing and his staff boarded the White Star Line's SS Baltic to begin the journey to France and the war.⁴³

Pershing's advance party consisted of 187 men - 40

Regular Army officers, 2 Marine Corps officers, 17 Reserve officers, 67 enlisted men, 56 clerks, and 5 civilian interpreters.⁴⁴ This was well below the number recommended by the War College Division on May 10, but with this meager force Pershing was to lay the groundwork for the A.E.F.

Initial Actions In France

Pershing was faced with innumerable problems as he left for France aboard the SS Baltic. But before many of them could be addressed, several basic decisions had to be made. First, a decision had to be made upon the initial size of the A.E.F. force. Next, an organization for the A.E.F. and its staff had to be worked out. Finally, a supply system had to be developed that could support this force. To ensure that the men and equipment arrived in France when needed, a priority schedule would have to be worked out in detail.⁴⁵

Several factors complicated initial planning for the A.E.F. One was the lack of a tested American organization. French and British ideas about organization of combat forces were studied by the various staff agencies and some were adopted. Another was the serious shipping shortage which faced the United

States. When war was declared, the United States Army had three cargo ships and four troop ships.⁴⁶ What shipping did exist would have to cross over 3,000 miles of ocean infested with German submarines. In the five months prior to Pershing's arrival in France, the Allies had lost 3,250,000 tons of shipping.⁴⁷ Losses were exceeding gains. Another crucial factor was the shortage of equipment for American units and the time required to redirect American industry. For these reasons, the A.E.F. was initially dependent upon the Allies for supplies and equipment for American units.

During the voyage to Europe aboard the SS Baltic, Pershing and his staff began to tackle the problems facing the A.E.F. Committees were formed for studying several important areas of concern - organization of A.E.F. headquarters; organization of ports of debarkation; use of French artillery; management of bases and flow of information; and organization of machine gun units.⁴⁸ For planning purposes, Pershing set the figure of one million men as the initial size of the A.E.F.⁴⁹ The Board on Ports, headed by Colonel D. E. McCarthy, the Chief Quartermaster for the A.E.F., was to inspect the ports available to the A.E.F. in France and to

provide information to enable Pershing to make a decision about the establishment of Lines of Communications in France.⁵⁰ The time at sea was well spent in preparing to gather information as quickly as possible once the staff arrived in France.

On June 8, the SS Baltic arrived in Liverpool. Pershing and his staff spent the next five days meeting with British officials. Captain Harbord Churchill, a member of the American Military Mission to France, briefed Pershing on June 8 about the latest French General Staff recommendations.⁵¹ Desiring more information from his own sources, Pershing dispatched the Board of Ports under McCarthy to France on June 10.⁵²

June 13 saw the arrival of the A.E.F. staff in Paris. As in Britain, the initial time in France was spent in meetings with French officials and at various ceremonies. Headquarters was established at buildings rented by the American Military Mission at 27-31 Rue Constantine.⁵³ Finally, on Sunday, June 17, the A.E.F. staff was able to sit down to begin work.⁵⁴

Almost immediately it became evident to Pershing that the numerous fact-finding missions in France were leading to a duplication of effort and confusion. Furthermore, some of them were

infringing upon his authority. Major Parsons and the Military Railway Commission were about to complete their work in France. Major Logan and the American Military Mission were providing answers to A.E.F. and War Department inquiries. Another commission had been formed by the War Department on May 18, the day Pershing sailed from New York City. The War Department had finally decided to send a mission to France to determine what "the organization, training, transportation, operations, supply and administration of our forces in view of their participation in the war" should be.⁵⁵ This board was headed by Colonel Chauncey B. Baker, a Quartermaster officer.

Major James G. Harbord, Pershing's Chief of Staff, summed up the views of the A.E.F. staff and the Allies toward the Baker Board.

There was some quiet amusement among our Allies that this American mission was headed by a Quartermaster, and utter inability to understand why such a body should be sent to report on the line organization with which General Pershing would fight his part of the war with the general and his staff already on the ground . . . How much more would they have wondered if they had realized that the mission was entirely free to suggest to the War Department any organization it fancied with no obligation to consult with either him [Pershing] or his staff.⁵⁶

War Department efforts were much too late. Instead of helping Pershing, the Baker Board created confusion and ill-will at A.E.F. headquarters.

A cable was sent to the War Department on June 18 in which Pershing mentioned French and British annoyance at being bombarded with numerous independent missions and individual officers seeking information. Not specifically mentioning his own annoyance, Pershing asked "that all officers sent to Europe in future for any duty be directed to report to these headquarters."⁵⁷ In this way, Pershing gained some degree of control over the independent groups seeking information from the Allies.

Initially, Pershing relied heavily upon Major Logan (who was "exceedingly able, almost indispensable in the first days of our organization in Paris") and the American Military Mission to France. The Military Mission had not only provided information prior to Pershing's arrival in France, and had obtained the buildings for A.E.F. headquarters, but it had also made arrangements with the French for the use of St. Nazaire as the debarkation port for the troops of the 1st Division who had departed from the United States on June 14. On June 20,

Pershing designated St. Nazaire Base Section No. 1, giving the Line of Communications its first facility. ⁵⁸

Pershing received information about French and British railway operations from Major Parsons' Military Railway Commission which had just completed a seventeen day inspection of Allied facilities. The board found that British railway operations were simplified because the British controlled the channel ports and the British Expeditionary Force was on the northern portion of the Allied front. Thus, its rail lines were short. The commission did notice a lack of adequate track and crane facilities in the ports and a shortage of railroad cars, but what impressed the commission most was British railway organization.⁵⁹ The British had begun the war with divided railway control, somewhat similar to the Field Service Regulations, except that the Royal Engineers controlled the Advance Section and the Quartermaster Corps controlled the rear. Because of the crucial importance of the railroads for supply and troop movements, the British had come to rely upon a civilian railroad chief whose title was Director General of Transportation. He was a "militarized" civilian with wide experience in the operation and management of rail-

roads.⁶⁰ This concept was approved by the civilian railway men of the commission.

In contrast, the French organization was suited to French problems. Since the war was being fought in France, the civilian Minister of Transportation controlled the interior of France and the commander of the armies controlled the Zone of the Armies. Railway lines were long and in poor maintenance. French ports were congested and lacking in proper equipment and adequate manpower. When the commission met with M. Claville, the French Under Secretary for Transportation, on June 6, he had asked for six railway regiments, dock construction units, three hundred consolidation locomotives, and two thousand kilometers of track materials along with shipping space aboard American ships to meet immediate French needs. He did express a hope that he would be able, after receipt of the above, to meet the A.E.F. requirements.⁶¹ The equipment requested by Claville was outside of the men and material needed for the construction, operation, and maintenance of facilities which were to be exclusively American.

Several major problems were brought to Pershing's attention by the Military Railway Commission. French ports and railways were in poor

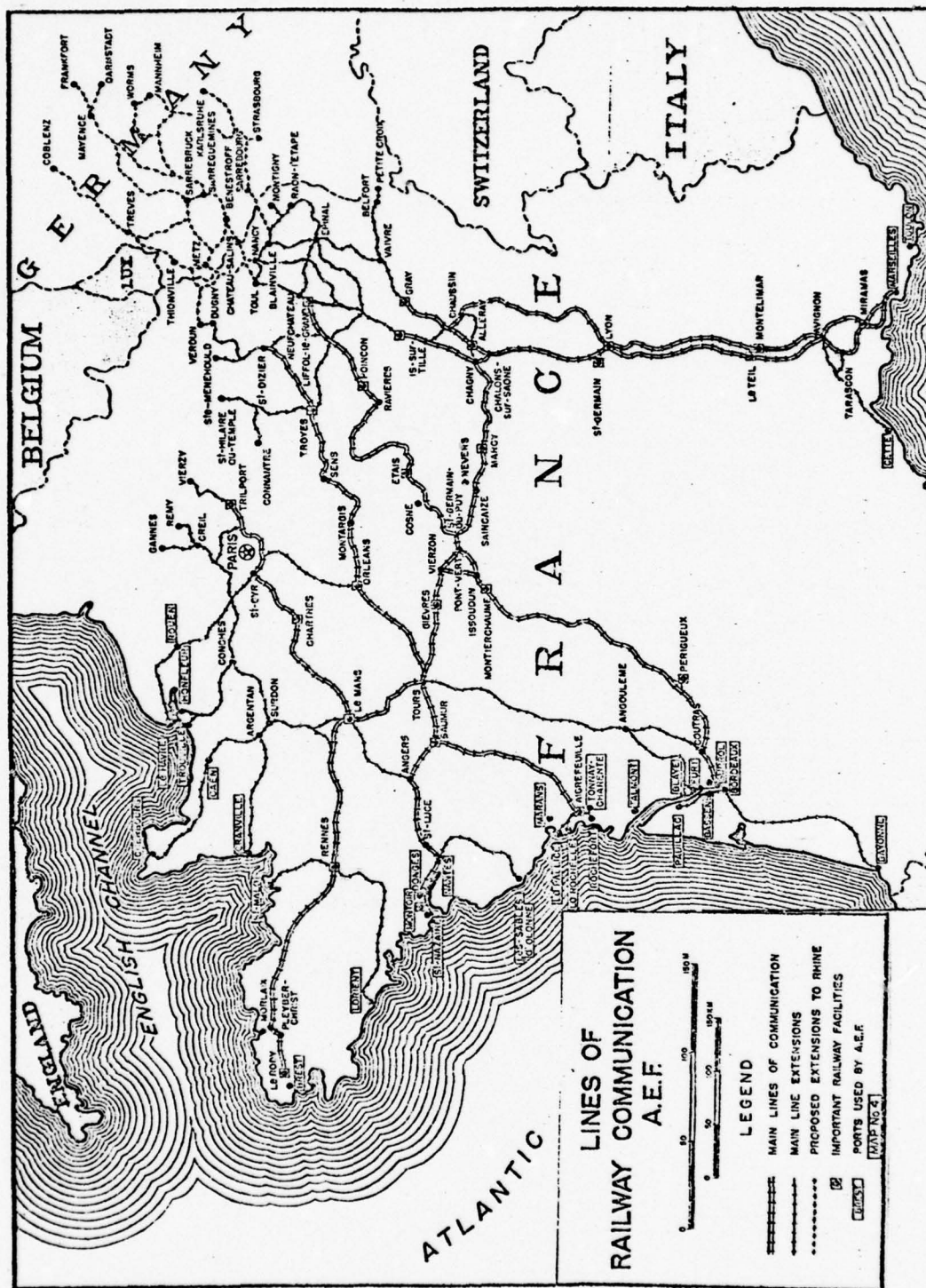
condition and would require a major effort to upgrade and improve them enough to give the A.E.F. a dependable supply system. The commission recommended that inland waterways be developed and that a large fleet of vessels be established in European waters. But most importantly, the commission strongly recommended that a single civilian railroad man be chosen to manage the railroads in France.⁶²

After completing its report, the commission disbanded on June 17. Majors Parsons and Wilgus and Captain Barber remained in France while the two civilians returned to the United States. Major Wilgus became a member of the A.E.F. staff, as did Captain Barber. Wilgus played a major role in the initial planning for the development of A.E.F. railways. He recommended a "prompt inspection of the Lines of Communication intended for American use" so that specific needs could be identified. He also advocated the "early adoption of an organization for the planning, direction, and supervision of all construction and maintenance work in France."⁶³

Many crucial questions had not been addressed by the Military Railway Commission because of its

instructions from the Chief Engineer. No estimates were made regarding the number and type of railway cars needed to support the A.E.F., or the number of locomotives needed. Other than identifying the need for improvements in the ports, no specific recommendation was made on how to expand existing rail and port facilities. The creation of a system of light railways which was being used by both the British and the French for frontline supply was not considered.⁶⁴

About the same time, on June 20, Pershing's Board on Ports submitted its report after visiting the ports of Nantes, St. Nazaire, La Pallice, Bordeaux, Bassens, and Pauillac - all along the southwestern coast of France and all relatively uncongested by French and British shipping. The board recommended that the French General Staff's plan for using two groups of ports along the coast be adopted. The northern group of ports included St. Nazaire and Nantes along the Loire River and the deep-draft naval base at Brest. The southern group consisted of Bassens and Pauillac along the Gironde River and La Pallice to the north. Both areas were connected by double track railways running from the ports to Lorraine, the



*Map from United States Army in the World War, 1917-1919, XV, 9.

recommended training area. The French intended to turn over the depot at Nevers to the A.E.F. and to allow the A.E.F. to construct facilities along the railways in the interior. It was anticipated that about 40% of the A.E.F.'s tonnage would come through the northern ports, 40% through the southern ports, and 20% through La Pallice.⁶⁵

It was recommended that St. Nazaire, La Pallice, and Bassens with their berths for nineteen ships be selected for permanent use by the A.E.F. Because of shallow harbors, poor port facilities, and bad railroad connections, the ports of Nantes, Bordeaux, and La Pauillac with additional berths for nine ships were chosen for emergency use only. The Board on Ports strongly recommended that all A.F.E. facilities in the ports and along the railways be placed under the complete control of the A.E.F.⁶⁶

Since the board had not been charged to consider only port conditions, several other recommendations were made. First, because of the large requirement for lumber to construct new facilities, forestry units equipped with portable sawmills should be organized and sent to France. Next, material for a large refrigeration plant would be required along with butchers to slaughter animals for fresh

meat. In addition, well diggers were needed to develop artesian wells for a water supply.⁶⁷

These were just the first of many new units which would have to be organized. It fell upon the A.E.F. to recommend an organization and upon the War Department to meet the requirement.

Poor storage facilities in the ports led the board to recommend that troop and supply centers be established in the center of France.⁶⁸ This was in contradiction to the guidelines set forth in the Field Service Regulations of 1914. Not designed to meet the specific needs of the A.E.F. in France, the Field Service Regulations almost immediately began to undergo modifications.

Finally, the board recommended that a general officer from the Regular Army be assigned as commanding general of the L.O.C. without delay so that "all questions relating to the service of the rear [could] . . . be turned over to this officer for settlement under such general instructions as the commanding general may see fit."⁶⁹ Just as the War College study had recommended, the Board on Ports saw the need to get organization and the L.O.C. out of the hands of the A.E.F. staff. Because of the enormity and complexity of the task, de-

centralization of decision-making was seen as a requirement for organization. But, as Harbord commented later, "matters that a year later were submitted automatically to the desk of a minor staff officer now claimed the attention of the highest [Pershing]." ⁷⁰

While Pershing was struggling with the problems of setting up the A.E.F., the first contingent of troops arrived at St. Nazaire on June 26 aboard the Army's four troop ships - Tenadores, Saratoga, Havana, and Pastores. ⁷¹ Pershing was present as the headquarters of the 1st Division, the 16th Infantry Regiment, two battalions of the 28th Infantry Regiment, two battalions of the 28th Infantry Regiment, one battalion of the 5th Marines, and some motor transport and stevedore troops landed. ⁷² Because of the limited number of ships available, only part of the 1st Division had arrived. The other part was to follow when the same transports returned to the United States. At that rate, the General Staff at the War Department calculated it would take seven years to ferry the A.E.F. across the Atlantic. ⁷³

This was Pershing's first visit to any of the ports recommended for A.E.F. use, and he was sur-

prised at how poor the facilities were and at the lack of any sense of urgency on the part of the workers in the port. He observed that "neither the local official personnel nor the port employees at St. Nazaire appeared fully to realize that their country was in the throes of a great war."⁷⁴ This was the first indication that cooperating with the French officials in A.E.F. ports might require Pershing's attention.

Arrival of the first elements of the A.E.F. made it critical for Pershing to select a sector in which to deploy the troops. Lieutenant Colonel John MacA. Palmer's board reported on June 28 that Lorraine, as the French had suggested, would be a suitable sector for the A.E.F.⁷⁵ Time was short, troops were arriving, and Pershing began to make his first decisions about the A.E.F.'s base.

Pershing's Initial Decisions

Selection of the A.E.F.'s training area was Pershing's first major decision and it was determined largely by logistical considerations: available ports and railway lines to the interior. As Pershing said, "the eventual place the American Army should take on the Western Front was to

a large extent influenced by the vital questions of communication and supply."⁷⁶

Since the only ports available to the A.E.F. were those along the southwestern coast of France, the main question was whether the railway lines were adequate to meet the requirements for supporting the A.E.F. Based upon an eventual force of 2,000,000 men, the A.E.F. staff determined that the railroads would have to be able to handle 50,000 tons of supplies daily.⁷⁷ It was decided that the lines from Bordeaux and St. Nazaire to Bourges-Nevers-Is-sur-Tille could handle 25,000 tons a day. A second line from Bourges to Cosne-Neufchateau could carry the remaining 10,000 tons.⁷⁸ Thus the railroads from the coast to Lorraine were adequate, even though the average length of the trip was 500 miles.⁷⁹ If an emergency arose, the port of Marseille along the Mediterranean could serve as a reserve port.⁸⁰

On July 1, Pershing cabled his decision to use Lorraine to the War Department. In his cable, he emphasized that

only available ports are those on Loire and Gironde Rivers and La Pallice-Rochelle all of which are also commercial ports. Main railroad lines leading northeasterly pass through district favorable

for location supply depots . . . use of ports . . . mentioned avoids interference with British bases while railroad routes indicated avoid French and English Lines of Communication with front. Location of area for depots permit shipment of supplies in any direction.⁸¹

Pershing's choice for the location of the A.E.F. supply depots was centrally located in France with railroads leading to all sectors of the front. This gave Pershing flexibility in the choice of future sectors for deploying the A.E.F.

A second major decision was made on July 5. General Orders No. 8 was published and it set up the basic organization of the A.E.F. staff. It was taken from the Field Service Regulations with one modification - the addition of a separate Air Service. The staff consisted of three general staff sections - administration, operations, and intelligence; three administrative sections - Adjutant General, Inspector General, and Judge Advocate General; and six technical sections - Quartermaster, Engineer, Ordnance, Signal, Medical and Air Service.⁸² Under this organization, Pershing had to personally deal with the chiefs of no less than twelve departments.

On the same day, the L.O.C. was organized and Colonel David S. Stanley, a member of the Quarter-

master section, became the acting commander.⁸¹

At this time, the L.O.C. consisted of two locations - St. Nazaire, which had been designated Base Section No. 1, and Nevers, which had been made the headquarters of the Advance Section on July 4.⁸²

On July 6, Pershing informed the War Department of his estimate of the initial A.E.F. strength. He cabled:

Plans should contemplate sending over
at least 1,000,000 men by next May.⁸³

Now that Pershing had decided where to put the A.E.F., how the staff would be organized and what its initial strength should be, he was faced with the problem of how A.E.F. units were to be organized. Wishing to ensure that his recommendations did not vary greatly with the report of the Baker Board, Pershing had members of his staff meet in joint session with the Baker Board from July 5 - 10.⁸⁴ This was a crucial time for Pershing. As A.E.F. commander he was having to get agreements from the Baker Board about A.E.F. organization. Harbord noted that "General Pershing kept his temper, was infinitely patient, and the commission finally agreed with the organization he recommended to the War Department."⁸⁵

Pershing's recommendation, known as the General

Organization Project, was completed on July 10 and forwarded by courier to the War Department the following day. It dealt with the organization of combat units and defined type divisional, corps, and army units. Pershing's staff was also working on two other organization projects that would round out the entire organization for the A.E.F. These were for the organization of the engineers and for the organization of units for the L.O.C. In the General Organization Project, Pershing clarified his July 6 cable on a 1,000,000 man force. The report stated:

It is evident that a force of about 1,000,000 is the smallest unit which in modern war will be a complete, well balanced, and independent fighting organization. However, it must be equally clear that the adoption of this size force as a basis of study should not be construed as representing the maximum force which will be needed in France. It is taken as the force which may be expected to reach France in time for an offensive in 1918, and as a unit and basis for organization. Plans for the future should be based, especially in reference to the manufacture . . . of artillery, aviation, and other material, on three times this force - at least 3,000,000.⁸⁸

Baker's report was submitted in late July and it agreed with Pershing's General Organization Project. In addition, the Baker Board identified the

need for several new logistical units: dock workers, warehouse units, salvage depots, and a printing office.⁸⁹ These were additional specialized units which were to be developed to meet specific needs in France for supporting the A.E.F.

On July 14, the Engineer Project was completed. To support an A.E.F. of 1,000,000 men would require about 35,000 engineer troops. They were to be organized into several different units which gave the engineers a varied capability. Engineer units recommended were: eleven engineer railway regiments, four road battalions, ten construction battalions, six topographical sections, two map reproduction units, ten water supply detachments, six water supply companies, five forestry regiments, forty labor companies, and six mining companies.⁹⁰

A standard engineer requisition for equipment, known as Requisition No. 6 was also completed. This enabled the Chief Engineer of the A.E.F. to requisition in multiples of Requisition No. 6 rather than listing each item separately. The requisition was based upon a force of 500,000 fighting men occupying a 40 mile front in Lorraine. It was divided into two parts: one section for

standard gauge railroad equipment and one for light (60 centimeter) gauge equipment. The standard gauge requisition called for 760¹ miles of track, 570 miles of telephone installation, 700 consolidated locomotives, 9,500 freight cars, 60 water stations, 16 engine-house equipments, 10 ambulance trains, 60 electric gantry dock cranes, material for 6,000 linear feet of wharf (enough for 15 ship berths), and a complete set of equipment for a general repair shop. The light railway requisition included 480 miles of track, 330 miles of telephone installation, 384 locomotives, 3,332 cars, 48 water stations, 16 engine-house equipments, and one general repair shop. Also requested were steam-shovels, pile drivers, lighting facilities, and bridging equipment.⁹¹ As specific figures were computed, the enormity of the task required to support the A.E.F. in France became more and more apparent to the A.E.F. staff and to the War Department.

Pershing's first month in France had passed quickly. Initial decisions had been made and planning had begun for the establishment of a logistical system capable of supporting the A.E.F. But the most difficult task lay ahead. Many

facilities had to be built and the men and materials were limited in quantity. It remained to be seen if the A.E.F. could build a logistical system which could work in the time available.

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CHAPTER II

DEVELOPMENT OF A LOGISTICAL SYSTEM:
SIX MONTHS OF TRIAL AND ERROR

A bulky staff implies a division of responsibility, slowness of action, and indecision, whereas a small staff implies activity and concentration of purpose.

GENERAL WILLIAM T. SHERMAN

As a result of his initial experience in France, Pershing realized that for his plans of a large American combat force to become a reality, a vast and complex supply system would have to be built behind the front. Such a system involved tremendous difficulties: congested ports, decrepit railroads, lack of qualified personnel, and unfamiliar French systems. Only a well-organized and coordinated effort could overcome these handicaps quickly. In fact, the task would require the establishment of an "organization in France on an unprecedented scale of another War Department" just to handle the logistics.¹ This burden now fell upon the A.E.F. staff.

Several major projects required Pershing's immediate attention. First, and most pressing, was a decision on the organization of the L.O.C. This included not only the physical location of the required depots and other facilities but also the number and type of units which were to man the L.O.C. Another problem arose in the methods of procuring supplies in Europe. The technical chiefs, accustomed to independent action in the United States, did not coordinate their purchases. Competition, high costs, and general inefficiency were the results. Civilian experts had to be identified to fill several important A.E.F. posts for which the pre-war army had little, or no experience. Railways, forestry and port operations were several of the key areas needing civilian expertise. Once the logistical system was set up and properly manned, then the arrival of troops and material from the United States would have to be coordinated to ensure that men and equipment arrived in the proper sequence and at the correct time so that the logistical system would be capable of handling them efficiently.

Building the Line of Communications

Organization of the L.O.C. was the subject of an initial conference held on July 19. Generally it was decided that each base section would embrace at least one major port. Several specific locations for facilities were discussed.² Supervision of this effort fell to Brigadier General Richard M. Blatchford who assumed command of the L.O.C. on July 25.³ An infantry officer, Blatchford had graduated from the Infantry and Cavalry School and the Army War College.⁴ Having served with Pershing as a brigade commander along the Mexican Border, Blatchford was recognized as an officer of proven ability and with a fine record.⁵ Time would tell how well he would do as commander of the L.O.C.

French authorities expected that the 1st Division would arrive in August, two divisions in September and October, and three each month thereafter.⁶ Immediate action was required to get the L.O.C. functioning. Pershing began to search for "men with expert knowledge and broad experience in business, industry, and transportation" to assist in building the L.O.C. He asked the War Department to appoint Professor Henry

Graves, Chief of the U.S. Forestry Service, to supervise A.E.F. lumbering operations.⁷

Major William J. Wilgus, former member of the Military Railway Commission and a civilian railroad man, recommended as early as June 27 that a single civilian head be appointed to manage the railways of the A.E.F. from the ports to the front. Because transportation was "second only in importance to the question of the general organization [of the A.E.F.]," Wilgus stressed the urgency of selecting a man to supervise the railroads so that planning and construction could begin as soon as possible.⁸

Late in July, Pershing sent the War Department a cable stressing the need for a separate transportation department run by a civilian expert. Pershing asked that a railway man be selected and sent to France without delay along with several assistants of his choice.⁹ On July 30, Pershing followed up the cable with a letter in which he stated that the railway men would be given appropriate military rank and that the chief of transportation would probably become a brigadier general.¹⁰

Not only did Wilgus recommend a civilian chief of railways, he also felt that a business organization should be adopted for running the A.E.F.

staff.¹¹ While Pershing recognized many advantages to business methods, he firmly believed that the purpose of the organization was to accomplish the tasks assigned by the commander even when business principles had to be sacrificed. For the time being, Wilgus' suggestion was shelved.

Conditions in France were demonstrating the inadequacy of the pre-war logistical organization. Changes would be required to develop a workable system. Pershing took the first step when he recognized that the railroads would have to be run by a civilian, but he stipulated that the civilian was to be a member of the U.S. Army and under his own direct control. While the old nomenclature of the Field Service Regulations remained, a new organization with a different division of responsibilities was evolving.¹²

Three lines of supply depots were adopted by Pershing on August 4. They coincided with the territorial divisions of the Field Service Regulations.¹³ At a conference with the French to study the conditions under which the Americans were to organize the L.O.C., Major Logan explained that the purpose of the successive lines of depots was to maintain in France a reserve of 90 days of supply.

Depots in the base sections would store 45 days while those in the intermediate and advance sections would hold 30 and 15 days respectively. This arrangement would allow continued supply of the A.E.F. if German submarines interrupted the shipping lanes to the United States. Colonel Payot of the French Army, suggested that the commanders of the sections be co-located with the French commanders in their areas to ensure coordination of efforts.¹⁴ A decision was made that the Americans were to conduct a reconnaissance of facilities near the front to locate suitable sites for the Advance Section depots.

On August 13 the Line of Communications was formally established and the geographic limits were defined as extending "from the sea to the points where delivery of supplies is made to the field transportation of the combatant field forces." The L.O.C. encompassed most of France. Headquarters were established in Paris and five sections were designated. Base Section No. 1 consisted of the facilities around the Loire River and included the port of Brest. Base Section No. 2 took in the ports along the Gironde River and La Pallice to the north. Base Section No. 3 was located along

the English Channel and included ports both in France and Britain. The Intermediate Section was defined as the area between the Base and Advance Sections. The Advance Section coincided with the French Zone of the Armies. Significantly, the Director of Railways was still placed under the control of the L.O.C. commander.¹⁵ For the first time, Blatchford knew what area was under his territorial jurisdiction.

On the following day, a Coordination Section was added to the staff of A.E.F. headquarters. Its purpose was to act as the connecting link between the supply agencies and the general staff. General supervision of supply matters, construction, railways, and the L.O.C. fell under its duties.¹⁶ This meant that two general staff sections dealt with the flow of men and supplies. The Administration Section dealt with requisitions and allotting tonnage from the United States and the Coordination Section was concerned with logistics in France.

Frontline supply of the A.E.F. occupied the attention of a third section of the General Staff: operations. On August 12-13, members of the operations section and representatives of the

supply sections toured French facilities in Lorraine. Organization of the Advance Section and location of its facilities were the objectives of their inspection. Major Alvin B. Barber, now a member of the administrative section, reported that the French decision on A.E.F. railway usage was not subject to negotiation as believed. The A.E.F. was to use the railways via Dijon for the first 25,000 tons each day and then the lines via Châtillon for the next 15,000 tons. Only after 40,000 tons were being handled on the other railroads was the railroad via Troyes available to handle the additional 10,000 tons. As a result of this inspection trip, a recommendation was made to Pershing that the A.E.F. occupy Lorraine initially as a training area.¹⁷ Consequently, emphasis on construction was directed to the port and intermediate facilities.

Now that the geographic limits of the L.O.C. were defined and the location of facilities was being decided, the question of the internal organization of the L.O.C. and the role of the Director of Railways arose once again. On August 16, Wilgus sent a memorandum to the L.O.C. commander in which he summarized the vast transportation

problems facing the A.E.F. As a solution, Wilgus recommended an organization based upon civilian business practices. Emphasizing a departmental organization, Wilgus divided the transportation department into five sections: railway transportation, equipment, business affairs, light railways, and construction. Each section would report to the chief of transportation. The memorandum came "informally" to Pershing's attention and he approved it on August 18. He gave Wilgus instructions to deal directly with him on important matters affecting the railways without regard for "red tape or rank."¹⁸ This decision practically made the transportation department independent of the L.O.C. and gave Pershing another agency to supervise. Three days after the duties of the L.O.C. commander had been defined in a general order, an informal decision by Pershing altered the lines of responsibility that the general order had sought to clarify.

Coordination of Local Purchases

Many supply sources had been developed by the Allies and the A.E.F. soon found itself in competition with them. The principal article in demand was lumber, and the Corps of Engineers and the

Quartermaster Corps, both charged with construction. entered into a lively contest to acquire it. Prices rose rapidly. Immense quantities of lumber for projected A.E.F. construction were involved. This competition caused delays and annoyance in the A.E.F. and gave the French cause for concern. French authorities imposed limitations upon lumber sales and made it difficult for the A.E.F. to meet even its most urgent requirements.¹⁹

In an effort to solve this problem, Pershing appointed a board of officers on July 17 to look into the creation of an agency which would supervise procurement in general and coordinate A.E.F. and Allied needs, thus checking the "scramble for supplies."²⁰ The board was to study the "question of establishing a purchasing bureau" for overseas procurement. All members of the board were members of supply sections, each had a knowledge of the supply problem, and each possessed a vested interest in working out an equitable solution.²¹ Pershing hoped the board would be able to develop some mechanism for reducing competition and ensuring a just allotment of supplies to each agency while keeping in mind overall A.E.F. needs.

Two weeks later the board submitted its findings. More concerned with the legality of the question than the need to adopt it, the board stated it believed a coordination of purchases would be legal only through an act of Congress. Board members were more interested in their old powers and were against any action to establish a business organization separate from the departments.²²

Pershing was not satisfied. In a memorandum to the Adjutant General, Pershing complained the board had "accepted too literally the wording of the order." His intention had been to establish a central board consisting of officers from each supply department and to have a central agent responsible for coordinating their purchases.²³ Calling the board's recommendations a "rather extended discussion", Pershing believed the situation was so critical that there was "no time to discuss technicalities. Some business-like method had to be adopted to meet the situation." A remedy to the approaching chaos caused by independent and uncontrolled actions by the supply departments had to be found. Still considering the solution as one merely of effective coordination, Pershing disregarded the board's recommendations

and decided to establish a purchasing agency.²⁴

General Orders No. 23 established the General Purchasing Board with its headquarters in Paris. It was to be under the supervision of a General Purchasing Agent who was to be in "liaison with the various Allied purchasing agents of the A.E.F."²⁵ Coordination of purchases was his sole duty and the actual purchasing was still left in the hands of the various supply department purchasing and disbursing officers. The Board had no authority to make purchases, but it did exercise the power of controlling purchases and the right to veto any purchase.²⁶ When two or more services desired the same item, only one was allowed to purchase it and the item was distributed equitably among the agencies requiring it.²⁷

Ten days later, the members of the General Purchasing Board were appointed. Lieutenant Colonel Charles G. Dawes, 17th Engineers and a personal friend of Pershing, was appointed to the position of General Purchasing Agent. Membership of the board consisted of representatives from all of the agencies which procured supplies: Quartermaster Corps, Medical Corps, Corps of Engineers, Signal Corps, Aviation Service, Ordnance Corps, Red Cross, and Y.M.C.A.²⁸

Dawes had known Pershing in Lincoln, Nebraska where Pershing had been on college duty and Dawes had been a young lawyer in the same town. Later Dawes had become a banker in Chicago and had served as McKinley's Comptroller of the Currency.²⁹ His relationship with Pershing was unique. He had direct access to Pershing both as a friend and as the chief of the General Purchasing Board. Harbord later wrote, "his direct access to the General [Pershing] occassionally put a little strain on the military conventionalities, and, as the boys sometimes said, he operated from a position 'out on a limb'."³⁰

Pershing gave Dawes almost unlimited discretion and authority in the development of a system of coordinating purchases and in the organization of the board. He was given a free hand in setting up liaison with the Allies and he was encouraged to "use any method which may seem wise" to secure supplies in Europe and relieve the strain on American shipping. Only someone that Pershing knew well and fully trusted would have been given this freedom of action. Dawes later stated, Pershing "made me an important element in this was."³¹ Dawes did not disappoint his friend.

Completing the A.E.F. Organization

Although A.E.F. headquarters moved to Chaumont on September 1, Pershing kept a liaison office open in Paris. In addition, L.O.C. headquarters remained in Paris at 19 Rue St.-Anne. Dawes and the members of the General Purchasing Board moved into the same building with the L.O.C. staff.³² Paris was centrally located and the place supplies could be procured and coordinated with the Allies.

Early in September, Pershing notified the War Department of his decision to establish a 90 day reserve of supplies in France. To reduce confusion and avoid needless requisitions, a system of automatic supply was established. Colonel McCarthy, Chief Quartermaster of the A.E.F., had recommended an automatic supply system while still a member of War Department staff during May, 1917; but the War Department had disapproved his suggestion.³³ As a result, each month priority cables were sent to the War Department which projected the requirements for the coming months. Opposition to an automatic supply system still existed in the War Department, but Secretary of War Baker upheld Pershing's position.

During the first months of the automatic supply system, studies were made regarding what items should be included under automatic supply. Estimates were based upon packets of 25,000 men. To minimize confusion about what items were on the automatic system, each supply chief was required to make up a cable telling his chief in the War Department what items were locally procurable in France. The General Purchasing Board was directed to purchase everything practicable in Europe to reduce the tonnage requirements of the A.E.F.³⁴

Supplies not included on the automatic supply lists and not available in Europe were requisitioned from the United States. Each supply chief submitted an estimate of his requirements for the next two months to the administrative section of A.E.F. headquarters. Based upon the allocation of tonnage which the supply department received from the A.E.F. total, the supply chief then made up a list of the items required that month which had been identified as available for shipping at ports of embarkation in the United States.³⁵ The administrative section then received and checked the lists, eliminated requests for supplies available in Europe, and consolidated the requests into a priority cable

from the A.E.F. to the War Department once each month.³⁶ All general tonnage requirements were computed on the basis of 61 to 63 pounds of supplies per man per day.³⁷

New organizations created special supply and organizational problems. For example, to meet the need for a gas warfare capability the Chemical Warfare Service was established in September.³⁸ Prior to its establishment, the War Department planned to divide the responsibility for gas warfare between the Corps of Engineers, which was to be responsible for the mechanical features of chemical warfare, and the Medical Corps, which was to handle the chemicals. This was finally deemed impractical and the Gas Service was set up under Colonel Amos A. Fries, an engineer officer. Initial studies led to the procurement of 100,000 gas masks from the British by the General Purchasing Board. It was decided for safety and to reduce tonnage that the chemicals required to make poisonous gas would be shipped from the United States.³⁹ Fries was given command of the 30th Engineers, the Gas and Flame Regiment, which became the first unit in the Chemical Warfare Service.⁴⁰ Initial confusion, delayed decisions, and unique requirements for equipment and supplies characterized the numerous

new organizations which arose in response to requirements existing in France.

On September 10, Pershing approved the Service of the Rear Project. This established the organization of units to service the L.O.C. and the rear sectors of the front. After a detailed study of the requirements, the percentage of support troops increased from the 20% estimated in the General Organizational Project in July to 35% of total A.E.F. strength - an increase from 188,641 to 329,653. This increase represented a maturing of the A.E.F. attitude toward the magnitude of the logistical problem. The minimum force required in France by May 1918 was increased from 1,131,826 to 1,328,488.⁴¹

Special units had been organized to meet the unique requirements of support in France. Pershing commented:

In order to provide supply troops as they were needed to correspond with the growth of our combat armies in France, a general scheme was prepared and sent to Washington on September 18th as a guide for the War Department. The project embraced the great body of specialists and laborers that would be necessary to run railroads, construct wharves and storehouses, saw lumber, and receive, store, and transport systematically the immense volume of supplies and material that would be consumed by our armies. Thorough

organization and training for such work were as essential as tactical training for the fighting men.⁴²

To meet the needs in France, a labor force of over 70,000 men was organized under the Quartermaster Corps, the Aviation Service was expanded to over 55,000 men, and an Engineer requirement of over 110,000 men was filled to run railways, construct facilities, and cut down trees. Most of these units were new to U.S. Army service and had been organized based upon study of the French and British systems and the Field Service Regulations.⁴³

By the middle of September, the A.E.F.'s supply system was beginning to take form. The L.O.C. had been defined, facilities were taken over from the French, and new locations were being identified. Organization of units to build and run the L.O.C. had been forwarded to the War Department for action. A general supply system based upon automatic renewal of supplies and 90 day reserve storage in France was being implemented. The General Purchasing Board was saving thousands of dollars and tons of shipping space through control of European procurement. But there was still one major problem area: transportation.

Beginnings of the Transportation Department

Wilgus had been appointed the Director of Railways on August 22, just four days after Pershing had approved Wilgus' organizational concept for a separate transportation department. Wilgus immediately began to try to get the transportation program moving. On the 26th, at a meeting with members of the A.E.F. and L.O.C. staffs, he brought up the question of who should "start the ball rolling" on the design and location of depots along the railways to the front. While sites at Gievres, Saint-Sulpice, Montoir, and Villiers-le-Sec had already been selected, more sites were required to build up the base needed for the A.E.F. "Nonreadiness for coming supplies, including a force of competent storekeepers to receive and issue them was a matter of grave concern,"⁴⁴ Wilgus later wrote.

Pershing was pleased with the initiative that Wilgus had displayed and with his handling of transportation problems. After rejecting W. W. Atterbury's requirement that Atterbury be given a free hand if he were to serve as chief of A.E.F. railways, Pershing heard nothing further on the matter from the War Department. At the end of August Pershing notified the War Department that

since he had heard nothing further about Atterbury, he preferred Atterbury not be sent to France unless the War Department felt strongly about the appointment. Pershing was pleased with Wilgus and intended to keep him as chief of the A.E.F. railways.⁴⁵

Two days later, William W. Atterbury arrived with a message from the Secretary of War appointing him Director General of Transportation (D.G.T.). Pershing was now placed in the embarrassing position of having to replace Wilgus who had gained his confidence and who had an excellent grasp of the A.E.F. transportation problems with Atterbury. It was initially decided to make Wilgus a member of the A.E.F. staff, but Atterbury was impressed with Wilgus' work and asked that Wilgus remain in the transportation organization as his chief assistant.⁴⁶

At his first meeting with Atterbury, Pershing was surprised with Atterbury's knowledge of the A.E.F. problems and his enthusiasm for getting on with the job. Pershing left the meeting convinced that Atterbury was the right man for the position.⁴⁷ What Pershing did not know was that Atterbury arrived without knowledge of Pershing's objections to his pre-conditions for working in the A.E.F.

Atterbury felt that he had been given a free hand in solving the A.E.F. railway problems. Pershing, on the other hand, assumed Atterbury knew that his relationship to the A.E.F. staff was that of any other supply department. This misunderstanding led to ill-feelings and confusion between Atterbury's department and the general staff chiefs.⁴⁸ It would be months before this problem was solved.

Atterbury was faced with many difficulties. One was the general deterioration of the French railway system and the poor conditions of the French ports. Major construction projects would be required to produce a workable system. Over six hundred miles of sidings, switches, and railroad yards would have to be built. Another problem was the great difference between the American and French railroad systems. The French switched their trains at the station, the Americans outside; the French used hand-brakes, the Americans air-brakes; the French trains ran on the left-hand track, the Americans on the right. The French system also used different signals. As a matter of fact, the only thing the two systems had in common was that red was recognized as the universal danger signal.⁴⁹ French railway equipment was in poor maintenance

and a shortage of cars and locomotives existed in meeting the French needs.

Atterbury spent the first two weeks in France reviewing Wilgus's plans and seeing first-hand the conditions of the proposed railway lines leading to the front and supply centers. He approved Wilgus's plans and pushed forward for the establishment of a separate Transportation Department. While it was true that the A.E.F. was only a commercial shipper on the French railroads, Atterbury envisioned an expanded A.E.F. railway service which would eventually run its own lines.⁵⁰

A separate Transportation Department was established on September 14. The D.G.T., Atterbury, was charged with the "operation, maintenance, and construction of all railways and canals under American control and with the construction and maintenance of wharves and roads, and of shops and other buildings for railway purposes." Wilgus's proposal had become reality. Brigadier General William C. Langfitt, an engineer officer, was appointed Manager of Light Railways, and Wilgus was made the Deputy Director of Railways. The handling of men and cargo from the port to the front was now placed under the control of a single

man, Atterbury.⁵¹ But the Transportation Department also inherited new responsibilities. It now had to compete with the Engineers and Quartermaster for building material and construction troops. It also had to develop a working relationship with the Army Transport Service, still part of the Quartermaster Corps, which was charged with the unloading of men and material in the ports. Most importantly, Atterbury had inherited an organization composed primarily of civilians who still did not understand their role as part of the A.E.F. military machine.

Trying to Make the System Work

At the end of September almost 60,000 Americans were in France and this increased the pressure on the logistical system.⁵² If this small number strained the system, what would happen when over 1,000,000 had arrived by the next May? Port congestion caused delays and increased the turnaround time for the ships. The delays were partly due to the poor dock facilities and the shortage of stevedores. The situation became so critical that Pershing had to use temporarily combat troops from the 1st Division and a regiment of U.S. Marines

as stevedores.⁵³ Pershing disliked using combat troops, but he had no choice until the men and material arrived to run the supply activities.

It appeared that at no time in its growth, would the means to transport, supply, and service the A.E.F. arrive in adequate quantities in advance of those units needing support. "The cart was indeed placed before the horse."⁵⁴ Unless better utilization of the few men and of the material available could be developed, it seemed that the A.E.F. was going to fail.

Not only were there problems in France, but confusion and delays existed in the United States. Ships were seldom loaded to capacity and lack of supervision caused much equipment to arrive damaged. Even items which were locally obtainable or not needed in France were sent because they were on a supply table at the War Department. At the end of September Pershing wired the War Department requesting that items not crucial to the conduct of military operations and to building up the A.E.F.'s logistical base should not be sent to France. Until this time, ships had arrived loaded with office equipment, lawn mowers, window shades, and the like. Exasperated, Pershing commented:

I have often wondered what manner of man was responsible for shipping such things, whether on supply tabies or not, thereby wasting tonnage when winter clothing, building material, steel and any number of real necessities were being delayed.⁵⁵

To clarify the system for requisitioning supplies, General Orders No. 43 was published on September 30. The General Purchasing Board was tasked as the agency responsible for coordination of local purchases, but each supply chief was charged with the responsibility of obtaining supplies under their jurisdiction. They were also held responsible for all depots and other facilities used by their service in France.⁵⁶ This meant, for example, that the Chief Quartermaster of the A.E.F. was responsible for all quartermaster facilities and operations in France. His relationship to the Chief Quartermaster on the L.O.C. staff was not clearly defined. Thus, while clarifying some problem areas, the general order did not address the relationship of the A.E.F. staff to the L.O.C. staff.

A corrected copy of General Orders No. 8 was issued on the same day. It formally stated the relationships to the A.E.F. staff of new agencies which had developed since July. The staff of the A.E.F. now consisted of five general staff sections - administrative, intelligence,

operation, training, and coordination; three administrative sections - Adjutant General, Inspector General, and Judge Advocate General; and twelve technical services - Quartermaster Corps, Ordnance Corps, Signal Corps, Medical Corps, Corps of Engineers, Air Service, Transportation Department, General Purchasing Agent, Provost Marshal, Line of Communications, Chemical Warfare Service, and Red Cross.⁵⁷ In less than three months, Pershing's staff had mushroomed to twenty sections which had direct access to the Commander-in-Chief. This did not include the commanders of the combat units which were now arriving in increasing numbers in France. Centralization of decision-making was about to strangle the A.E.F. staff work.

But Pershing was confident that the logistical system was off to a good start. On October 4 he wrote Secretary of War Baker:

My earnest thought has been devoted to organization, and it is believed that the general system evolved will, in a short time, become more or less automatic, especially as to the services of the rear. The administrative staffs and my General Staff have been brought into thorough accord. The new railway transportation department, under Mr. Atterbury, as materials and personnel arrive, will soon be able to meet our transportation requirements. But the delay in the arrival of forestry troops and dock

material will postpone construction and may result in some congestion. The purchasing agency, under Colonel Dawes, is coordinating American purchases in Europe in conjunction with the French and British control and will bring a great saving in the cost of supplies and economy in transportation.⁵⁸

During the same period, Dawes was less optimistic. He wrote, "Coordination of our own activities is our first problem. We are rapidly - but none too rapidly - solving it."⁵⁹ Both felt that progress was being made at an adequate pace.

One portion was missing from the A.E.F. master plan to the War Department. The priority in which units were to be shipped to France to assure a balance between the combat forces and the logistical units needed to support them had not been developed. This program was sent to Washington the first week in October and called for six increments of troops.⁶⁰ The entire program had carefully been worked out by the chief of the administrative section of the A.E.F. staff, Colonel Logan, who was assisted by Colonel Barber.⁶¹

With the forwarding of the priority schedule to the War Department, the master plan for the A.E.F. was completed. Pershing said:

The importance of these three documents, the General Organization Project, the Service of the Rear Project, and the schedule of priority of shipments should be emphasized, because they formed the basic plan for providing an army in France together with its material for combat, construction, and supply.⁶²

Although the plan had been completed for the general organization of the A.E.F., many of the internal problems still had to be resolved. Getting the supply system to function properly was the most important of these.

When he toured the ports at the end of October, Pershing found the facilities of the L.O.C. less than adequate. The ports were still congested. Construction projects were behind schedule. Special units arriving to man the L.O.C. were not meeting expectations. One specially organized stevedore regiment arrived with only eleven of its thirty officers having any experience in handling cargo. The remainder had no idea at all what was required.⁶³

Port congestion was the result of several factors. First, the shortage of ~~stevedores~~ slowed operations. Second, the expansion and modernization of port facilities was behind schedule. Third, the French insisted on controlling the movement of ships

in and out of the ports. Fourth, the U.S. Navy directed all cargo ships to St. Nazaire while other ports had vacant facilities to handle the ships.⁶⁴ Men and material were a function of the available tonnage to ship them across the Atlantic. Pershing was able to get some French cooperation in the ports, but it would come only later. Pershing felt that these problems should have been brought to his attention sooner.

But the ports were not the only place disorganization existed. In the interior, the 26th Division, expecting food and ammunition for training, received instead infant's underwear. The 42nd Division received wagon bodies without wheels.⁶⁵ What supplies the 42nd Division received were scattered over a ten-acre field and serviced by only 6 motor trucks for an eighteen mile area.⁶⁶

Separation of logistical functions in the ports led to further delays and disorganization. In each port, the transportation officer reported directly to Atterbury, but the men who worked for him during the day in unloading and transferring cargo were stevedore troops under the control of the Base Section commander. The Base Section commander used the troops at his disposal to man all projects in his Base Section, thus the transportation officer

never knew how many men he would have each day until they arrived.⁶⁷ While some Base Section commanders saw the need for better coordination, they were under the most stringent orders not to interfere with the technical services.⁶⁸ Within the ports, no one coordinated the work or set priorities for what work should be accomplished first. Each technical chief was concerned with his job only.

Despite Pershing's cables urging better supervision of shipping in U.S. ports, there was little improvement. Piling, desperately needed for wharf construction, arrived after delays in Bordeaux only to be found too short. A ship made the trip across the Atlantic loaded with sawdust for the cold storage plant being constructed in France. No one thought that there might be abundant sawdust in the logging camps of the A.E.F. forestry units.⁶⁹ The available shipping was badly used because of inadequate supervision in the ports of embarkation and poor facilities for unloading at the ports of debarkation.

Regardless of the many problems facing the L.O.C., the officers and men were fairly optimistic and could see some progress being made. But there was a lack of purposeful direction in the base sections,

and Pershing decided that the base sections would be commanded by a general officer with a staff to coordinate and systematize the affairs in each base section. The implementation of this change would bring considerable improvements in the handling of men and material in the ports and marked progress in the construction programs.⁷⁰ One man now was held responsible for all the operations in each section and he was given command of the section and the authority to enforce his decisions.

At the same time Pershing decided that Major General Blatchford was not performing his duties as L.O.C. commander adequately. New and more vigorous leadership was required. Pershing requested the War Department allow Major General Francis J. Kernan, who was scheduled to command a combat division, to remain in France as commander of the L.O.C. Brigadier General Mason M. Patrick was made the acting commander when Blatchford was relieved.⁷¹ Blatchford, who had come so highly recommended, was reassigned to supervise construction and billeting in the training areas in Lorraine before being sent back to the United States for retirement.⁷² He was one of many Regular Army officers who did not measure up to Pershing's standards of performance.

November was a month in which the supply situation continued to deteriorate. The autumn of 1917 saw a decrease in Allied shipping by 17,000,000 dead-weight tons. Only about half of it had been replaced through building programs.⁷³ War Department shipping estimates began to look more and more visionary to the A.E.F. The United States had raised an army of over 1,000,000 men and it was faced with the problem of having no shipping to carry them or their supplies across the Atlantic.⁷⁴ A partial solution was found in November when the Allies formed the Allied Shipping Committee which was charged with managing shipping resources to meet all Allied needs.⁷⁵

In an attempt to speed up the turn-around time and to relieve congestion, A.E.F. ports designated for emergency usage were utilized. La Pallice received its first ship on November 7 and Brest soon became the center of troop arrivals.⁷⁶ Pershing wrote Baker about the need to acquire more shipping. Pershing's view was that "it should be no longer a question of how much tonnage can be spared for military purposes, but only the most imperative necessity should permit its use for any -- other purpose."⁷⁷ He felt all shipping in the United States should come under War Department control.

A Critical Analysis of the Logistical System

On November 15, Colonel Johnson Hagood, the new commander of the Advance Section, wrote a detailed analysis of the problems which confronted the L.O.C. in general and the Advance Section in particular. He considered the operation of the L.O.C. the "most important problem now confronting the American Army. Upon its successful operation, more than upon the successful operation of all other agencies combined, depends the outcome of the war." This is a startling statement considering that the month before Hagood had been concerned only with his artillery regiment and preparations for combat. Few line officers assigned to the L.O.C. showed the concern and insight that Hagood did. He continued:

If the United States does not actually fail, its efficiency is certainly going to be tremendously decreased by the sheer incompetence of its line of communications, beginning in the United States . . . and ending at the French front. This incompetence not only applies to the machine as a whole, but . . . applies to the individual officers and employees, none of whom has had experience in solving such a problem.⁷⁸

Hagood identified the major deficiencies of the L.O.C. as he saw them. First, he attacked the tendency of assigning only officers who had not been able to measure up in line assignments to the

L.O.C. Few officers were assigned because of special talent to do the job. Next, he complained of the lack of plans for Advance Section operations. Third, Hagood noted the lack of adequate facilities in the Advance Section and the fact that day-to-day operations took priority over any planning for the increasing requirements of the near future. Lastly, he believed that no study had been made of the French and British methods by someone who was actually to do the job.⁷⁹ As a line officer, all Hagood knew about his job was what he could find from asking his superiors and checking the skimpy files in his office.

"Firmly convinced that the majority of these things have not been looked out for," Hagood proposed several suggestions. The first was a decision on what system of supply was to be adopted: French, British, pre-war American, or some combination. Next, a clear delineation of responsibilities between the logistical agencies in the L.O.C. and those in A.E.F. headquarters had to be made. A major effort also had to be made to ensure that the supply system was understood both by those using it and by those maintaining it. Fourth, Hagood felt that minor decisions should be made

by minor officials and only major decisions should become the concern of Pershing and the A.E.F. staff. For the L.O.C. to function, adequate manpower to man it would be required, and Hagood sought the services of a combat division. Fifth, routine matters should be handled by the supply departments and the A.E.F. and L.O.C. staffs should be concerned with planning and general policy. Last, and most important, the L.O.C. had to be staffed with men who were selected on their ability and experience - not the rejects of the line.⁸⁰ Although Hagood did not have access to the previous work done by the A.E.F. staff, he was able to quickly identify the serious faults of the system.

Hagood concluded his reports to the L.O.C. commander and Pershing by saying:

It is quite practicable for me to continue my office here on the emergency basis, following the routine from day to day and solving each problem, as presented, to the best of my ability and with the facilities offered . . . I can do no more with my own hands and head than any other average man. I can accomplish my end only by building up an organization, a smooth-running, high grade machine of tremendous efficiency, but if the material for such an organization is not placed at my disposal there is no use to attempt it.⁸¹

Although no formal response was given to this report, Hagood soon found himself the Chief of Staff of the L.O.C. Major General Kernan, the new L.O.C. commander, decided that he would work on solving the immediate problems facing the L.O.C. and Hagood would be left free to develop an organization capable of handling the future needs of the A.E.F.⁸² New ideas and a determination to get things done came to the L.O.C.

In an effort by the A.E.F. staff to clarify the responsibilities within the General Staff, the Coordination Section received new instructions on November 19. It supervised "all questions concerning supply and transportation in France." Operations of the supply departments, the General Purchasing Board, the Transportation Department, and the L.O.C. fell under its purview.⁸³ This was the only section in the A.E.F. staff which tried to pull together all the problems of supply, transportation, storage and distribution. But it was divided between becoming involved in the day-to-day problems which had to be solved in the planning for future combat operations.

Port congestion at St. Nazaire continued and tensions between the Quartermaster Corps and the Transportation Department heightened as each

blamed the other for the delays. The Quartermaster Corps, through the Army Transport Service, was charged with unloading of ships. This was being done quickly and the supplies were stacking up on the docks because the railway service could not reload the trains and move the supplies to the depots quickly enough. The Transportation Department complained that the stevedores were only concerned with the speed of unloading ships and were not concerned in the least with expediting the loading of railway cars.⁸⁴ The problems of ill-defined responsibilities and the lack of teamwork still had not been resolved.

Major General Francis J. Kernan was appointed Commanding General of the L.O.C. on November 27. Kernan was a man of high reputation and ability, but so had been Blatchford. An infantry officer, Kernan had served as General MacArthur's aide in the Philippines and had served as the Acting Assistant Chief of Staff during the first days of the war.⁸⁵ His ability to organize and supervise the L.O.C. would soon be tested.

On the same day Kernan assumed command of the L.O.C., the geographical boundaries and section designations were changed. The channel ports in

France were now designated Base Section No. 4 and Great Britain became Base Section No. 3. Since Brest had become an important troop debarkation port, it was designated Base Section No. 5.⁸⁶ With the Advance and Intermediate Sections, Kernan now commanded an organization which consisted of seven divisions - each with its own unique problems.

Two disturbing questions arose out of studies conducted by the operations section of the A.E.F. staff. The first arose from a report on the priority system, the supplies required, and the available tonnage. The study concluded that "the tonnage or man-carrying capacity of the fleets . . . is not sufficient to put one million men in France by June 1, and keep them supplied."⁸⁷ If ships could not be built faster or tonnage found elsewhere, Pershing would receive a force less than he required if the A.E.F. was to make a major effort in the war.

A second question was raised by Colonel Fox Conner in a memorandum to Pershing about the role of the technical sections of the A.E.F. staff when A.E.F. combat units advanced and Pershing's headquarters moved forward. Conner suggested that the technical chiefs not accompany the A.E.F. head-

quarters but that they be left in Chaumont with authority to act for the Commander-in-Chief and to forward to Pershing "only such matters connected with these departments as are matters of general policy and considerable importance."⁸⁸ Slowly it was becoming apparent to Pershing that centralization of all A.E.F. activities was not only leading to delays and confusion, but it would not be possible for a huge headquarters to function as a field headquarters.

Final Efforts in 1917

During the first of December, Pershing directed each of the supply agencies to review the troops strength of the Service of the Rear Project and to decide what units could be cut. Thirty percent was the size of the reduction.⁸⁹ The lists of cuts were to be submitted to the A.E.F. staff in the priority of reductions desired. Once again Pershing was willing to sacrifice personnel in the L.O.C. to build up combat forces, even though he understood the dangers if the L.O.C. were to collapse.

With the organization of a separate Motor Transport Service on December 8, the Quartermaster

Corps' only transportation responsibility was that of the Army Transport Service.⁹⁰ The D.T.C. was trying to have it placed in the Transportation Department. Even though the reason for organizing a separate Motor Transport Service had been to better utilize the limited number of motor transports, the Motor Transport Service exercised no control over the operations of its units or its vehicles after they had been assigned to other departments or base sections.⁹¹

In a letter to Colonel Avery D. Andrews, Pershing expressed some of his concern for the logistical system and its efficiency. Pershing felt that Atterbury was "entirely and most hopelessly ignorant of military affairs." As a result, Atterbury had a tendency not to run his department as a coordinated part of the A.E.F. More concern existed in the Transportation Department for running an efficient organization than meeting the military requirements of the A.E.F. Pershing was willing to admit that many of the problems faced by the Transportation Department and the supply system were the fault of no one in France, but this did not change the "necessity of handling troops and supplies as they arrive . . . regardless of

whether we have completed our projects or not."⁹² While sympathetic to the problems, Pershing wanted results. In contrast to his comments about Atterbury, Pershing praised the work of Dawes and the General Purchasing Board. He cited the fact that over a million tons of supplies had been obtained abroad and thus freed shipping for more important items. Pershing hoped that his old West Point classmate, Andrews, would be able to bring the Transportation Department into line with the overall A.E.F. program.

Another result of Hagood's report in November was a meeting between the A.E.F. and L.O.C. staff which studied the logistical system. To clarify responsibilities, General Order No. 73 was issued. It accomplished two things. First, it explained the supply system and defined the parts of the system such as the regulating station and railhead. It divided all supplies into four classes and explained in detail the procedures for obtaining each class.⁹³ The dissimulation of information about the supply system and its procedures that Hagood had recommended was now a reality. Second, the general order clearly divided the responsibilities for procurement, storage and

transportation. The supply chiefs, by means of requisition to the United States or local purchases supervised by the General Purchasing Board, were solely responsible for procurement of supplies under their responsibility. The L.O.C. commander was held responsible for care and storage of supplies within his geographic jurisdiction. Transportation, from the port to the front, was the responsibility of the D.T.G. and his organization.⁹⁴ Coordination of these activities still rested with the A.E.F. staff.

For the first time combat units had an idea about what the supply system was and how it worked. But there were still some shortcomings. The D.T.G. lost control of railway cars when they reached the regulating station. There, a General Staff officer controlled them until they were returned empty from the railheads. A more serious deficiency was the failure to clarify the relationship of the supply sections on the A.E.F. staff to those on the L.O.C. staff.⁹⁵ No single agency supervised the supply system and no one was directly responsible for failures resulting from poor coordination between the departments.

In the middle of December the geographic limits of the sections of the L.O.C. were adjusted to

coincide with French departmental boundaries. The revocation of General Orders No. 20 and 66 made this new organization clearly defined.⁹⁶ Coordination with French officials was greatly simplified by this new arrangement.

On December 18, the Quartermaster Corps ended its involvement in transportation when the Army Transport Service became a part of the Transportation Department. The D.T.G. now controlled all A.E.F. rail and water transportation in France. But the Transportation Department, like most of the rest of the A.E.F.'s supply agencies was still ill-prepared to exercise its duties. At the end of 1917, the Transportation Department consisted of a meager staff, an inadequate and poorly trained force of stevedores, partial claim to four construction regiments, only thirty locomotives and no railway cars and no car repair personnel to fix French railway cars.⁹⁷

Even though men and material were lacking, during the first six months in France tremendous efforts had been made to organize, locate, and construct numerous facilities extending from the ports to the regulating stations at the front. The general orders published in December were an attempt to express

the lessons learned and to provide a clear understanding of who was to do what. But the fact remained that Pershing was the only person responsible for the entire supply system and not just a part of it. As more and more troops arrived, he would find his time increasingly spend on the conduct of training and preparation for combat operations. If the logistical system would continue without his supervision remained to be seen.

NOTES

- ¹Pershing, My Experiences, I, 110.
- ²Ibid., 108-109.
- ³Final Report of the Commanding General, S.O.S., A.E.F., dated May 25, 1919, United States Army in the World War, XV, 3.
- ⁴U.S. War Department, Register, 10.
- ⁵Harbord, American Army, 124.
- ⁶British Public Records Office 32, War Office 106/468, French secret document on the A.E.F. dated July 28, 1917.
- ⁷Pershing, My Experiences, I, 104-105.
- ⁸Wilgus, Transporting the A.E.F., 15-16.
- ⁹Pershing, My Experiences, I, 135.
- ¹⁰Letter from Pershing to War Department dated July 30, 1917, Box 16, Papers of John J. Pershing, Library of Congress.
- ¹¹Wilgus, Transporting the A.E.F., 17.
- ¹²Harbord, American Army, 359.
- ¹³General Headquarters' War Diary, Entry 56-a dated August 4, 1917, A.E.F., Records Group 120, National Archives.

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DELIVERING THE GOODS: THE DEVELOPMENT OF AN AMERICAN LOGISTICAL--ETC(U)

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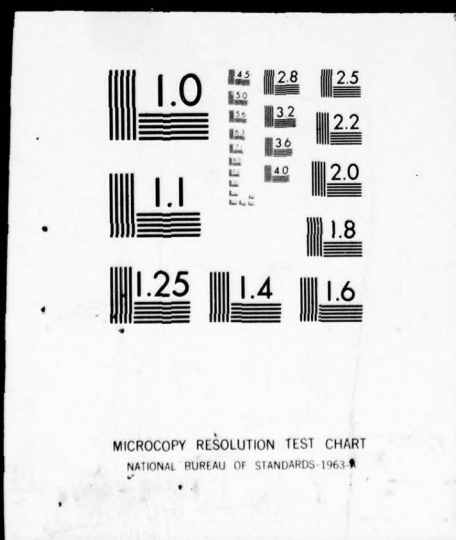
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¹⁴Minutes of Conference with French Minister of War dated August 9, 1917, File No. 1003, Folder No. 681, Part 1, G-3, G.H.Q., A.E.F., Records Group 120, National Archives.

¹⁵General Orders No. 20 dated August 13, 1917. United States Army in the World War, XVI, 52-53.

¹⁶Final Report of Assistant Chief of Staff G-4 dated April 5, 1920, United States Army in the World War, XIV, 62.

¹⁷Report on Tour of Inspection made August 12-13, submitted by Major A. B. Barber with accompanying memoranda by Lieutenant Colonel J. McA. Palmer, August 22; Major A. B. Barber, August 22; J. G. Harbord, August 23; and Major H. A. Drum, August 26, File No. 1003, Folder No. 681, Part I, G-3, G.H.Q., A.E.F., Records Group 120, National Archives.

¹⁸Wilgus, Transporting the A.E.F., 21-24.

¹⁹Pershing, My Experiences, I, 147-148.

²⁰Ibid.

²¹Proceedings of a Board of Officers convened under Special Orders 39, dated July 17, 1917, File No. 15528, C-I-C Correspondence, G.H.Q., A.E.F., Records Group 120, National Archives.

²²Ibid.

²³Memorandum for the Adjutant General dated August 4, 1917, File No. 15518, C-I-C Correspondence, G.H.Q., A.E.F., Records Group 120, National Archives.

²⁴Pershing, My Experiences, I, 148.

²⁵General Orders No. 23 dated August 20, 1917. United States Army in the World War, XVI, 56-57.

²⁶Erna Risch, Quartermaster Support of the Army: History of the Corps, 1775-1939, 667.

²⁷U.S. War Department, Organization, 37.

²⁸General Orders no. 28 dated August 30, 1917. United States Army in the World War, VI, 64.

²⁹Harbord, American Army, 125, 140-141.

³⁰Harbord, Personalities, 7.

³¹Charles G. Dawes, A Journal of the Great War, I, 21.

³²Letters No. 1672 from Pershing to Ministry of War dated August 31, 1917, United States Army in the World War, II, 36.

³³Risch, Quartermaster, 666.

³⁴Final Report of the Commanding General, S.O.S., A.E.F., dated May 25, 1919, United States Army in the World War, XV, 10-11.

³⁵Ibid., 11.

³⁶Harbord, American Army, 471.

³⁷Girard L. McEntee, Military History of the World War, 401.

³⁸General Orders No. 31 dated September 3, 1917, United States Army in the World War, XVI, 67-68.

³⁹Pershing, My Experiences, I, 166.

⁴⁰Leo P. Brophy, "Origins of the Chemical Corps," Military Affairs, XX (Winter, 1956), 219.

⁴¹U.S. War Department, United States Army in the World War, I, 144.

⁴²Pershing, My Experiences, I, 169.

⁴³U.S. War Department, United States Army in the World War, I, 144-146.

⁴⁴Wilgus, Transporting the A.E.F., 24-26

⁴⁵Ibid., 26-27.

⁴⁶Ibid., 27-28.

⁴⁷Pershing, My Experiences, I, 156.

⁴⁸Harbord, American Army, 142-143.

⁴⁹Marocossou, S.O.S., 84-86.

⁵⁰Harbord, American Army, 395.

⁵¹General Orders No. 37 dated September 14, 1917. United States Army in the World War, XVI, 74-75.

⁵²Pershing, My Experiences, I, 188.

⁵³Ibid., 168

⁵⁴Slade, French Railroads, 10-11.

⁵⁵Pershing, My Experiences, I, 185.

⁵⁶General Orders No. 43 dated September 30, 1917. United States Army in the World War, XVI, 89-90.

⁵⁷Ibid.

⁵⁸Pershing, My Experiences, I, 189-190.

⁵⁹Dawes, Journal, I, 41.

⁶⁰Letter and Schedule No. 1314 from Pershing to War Department dated October 7, 1917, United States Army in the World War, II, 53-55.

⁶¹Harbord, American Army, 138.

⁶²Pershing, Final Report, 9.

⁶³Pershing, My Experiences, I, 209.

⁶⁴Ibid., 208.

⁶⁵Hagood, Services of Supply, 107.

⁶⁶Ibid., 53.

⁶⁷Harbord, Personalities, 11.

⁶⁸Hagood, Services of Supply, 108.

⁶⁹Pershing, My Experiences, I, 210-211.

⁷⁰Ibid., 212.

⁷¹Harbord, American Army, 164.

⁷²Hagood, Services of Supply, 43.

⁷³J. A. Salter, Allied Shipping Control: An Experiment in International Administration, 144.

⁷⁴Requin, America's Race, 104.

⁷⁵Salter, Allied Shipping, 153-155.

⁷⁶General Headquarters' War Diary, Entry 167-b dated November 23, 1917, A.E.F., Records Group 120, National Archives.

⁷⁷Pershing, My Experiences, I, 238.

⁷⁸Hagood, Services of Supply, 56.

⁷⁹Ibid., 57-58.

⁸⁰Ibid., 59-61.

⁸¹Ibid., 65.

⁸²Ibid., 73.

⁸³Final Report of Assistant Chief of Staff G-4 dated April 5, 1920, United States Army in the World War, XIV, 63.

⁸⁴Pershing, My Experiences, I, 243.

⁸⁵U.S. War Department, Register, 9; Register of Graduates and Former Cadets of the United States Military Academy, 272.

⁸⁶General Orders No. 66 dated November 27, 1917, United States Army in the World War, XVI, 124-125.

⁸⁷G-1 Memorandum 11 dated 29 November, 1917, United States Army in the World War, II, 83-87.

⁸⁸General Headquarters' War Diary Entry 185-f dated December 11, 1917, A.E.F., Records Group 120, National Archives.

⁸⁹AG Memorandum No. 5488-0 dated December 8, 1917, United States Army in the World War, II, 97.

⁹⁰General Orders No. 70 dated December 8, 1917, United States Army in the World War, XVI, 129-134.

⁹¹U.S. War Department, Organization, 72.

⁹²Letter from Pershing to Colonel Avery D. Andrews, dated December 10, 1917.

⁹³General Orders No. 73 dated December 12, 1917, United States Army in the World War, XVI, 136-140.

⁹⁴Ibid.

⁹⁵Hagood, Services of Supply, 71-72.

⁹⁶General Orders No. 75 dated December 14, 1917, United States Army in the World War, XVI, 142.

⁹⁷Wilgus, Transporting the A.E.F., 40.

CHAPTER III

BIRTH OF THE SERVICES OF SUPPLY:
THE HAGOOD BOARD

Commanders and leaders in every form of human activity are forever on the lookout for "a man" to do certain things. Some fairly successful leaders put the "man" above the organization. That I believe to be wrong. Any organization built around one man fails when the individual is no longer available. It should be built to carry on, and is above and beyond any single individual.

MAJOR GENERAL JAMES G. HARBORD

At the end of 1917, over 170,000 American soldiers had arrived in France.¹ As the number of troops increased, the shipping shortage became more critical and the strengths and weaknesses of the A.E.F.'s logistical system became more apparent.² As with any other machine, the ultimate test of the system would come when it was called upon to support the A.E.F. in combat.³ But before that happened, other circumstances would lead to a radical reorganization of the system.

Serious external and internal problems existed with the logistical system. Externally, the shortage of shipping tonnage was a major constraint on the regular development of the required facilities. Although ships were being seized, chartered, built, and purchased throughout the world, shortage of shipping appeared to be a long term problem.⁴ Internally, the logistical system did not possess the degree of coordination and teamwork which would be necessary for smooth day-to-day operations, much less to meet a major emergency. Brigadier General Atterbury was known as a difficult subordinate who carried "a chip on his shoulder" against military men and their methods. While Pershing did commend Atterbury's organization for its businesslike practices, the fact remained that the Transportation Department was probably the least efficient department in the logistical system.⁵ Until the Transportation Department and the other elements of the system could be brought into better accord with one another, the system, as organized, was subject to failure.

General Orders No. 73 In Action

Instead of clarifying the responsibilities of the various departments of the logistical system so that more effective teamwork resulted, General Orders No. 73 created the situation in which each department strived to fulfill its duties, which were now clearly defined, without concern about how their actions affected the entire system. Again, the lack of an overall supervisor can be seen. "Buck passing" occurred not only at the local level, but permeated the system to the highest levels.

An oat shortage provides an example of the results of General Orders No. 73. Complaints were received at A.E.F. headquarters that oats, which had not been requisitioned and were desperately needed, had not been received by the forward units. Oats were stocked in the base and intermediate depots. Upon inquiry by A.E.F. headquarters, Kernan stated that the oats had been delivered to the Transportation Department for shipment to the units and his responsibility ended there. He had no idea where the oats were. The Transportation Department, being only a shipper, had no idea about the need for the oats or their location. No department seemed interested in

locating the oats and getting them forward, only in avoiding blame.⁶

Finally, after charges and countercharges had been passed between departments, A.E.F. headquarters moved to solve the problem. Its solution was about as bizarre as the episode itself. Instead of making the Transportation Department or the L.O.C. responsible for locating and forwarding the oats, it was decided that the Quartermaster Corps, which procured oats, would ensure that the oats got to their destination. How was this accomplished? A number of soldiers, known as convoys, were detailed to accompany the oats forward in railway cars. Whenever a delay occurred, the convoy would notify the Chief Quartermaster at A.E.F. headquarters. The Chief Quartermaster would then approach either Atterbury or Kernan and request their assistance in resolving the problem. If the Chief Quartermaster did not feel that he was getting help, his last alternative was to appeal directly to the A.E.F. general staff.⁷ While this procedure did speed up identification of problems, it also diffused the responsibility for distribution of supplies, it tied down men who were desperately needed at other

parts of the logistical system, and it placed responsibility in a department which did not have the authority to accomplish its duties.

Realizing that some other solution was required, Pershing directed the Inspector General, Major General Andre W. Brewster, to study the possibility of decentralizing the activities handled by the A.E.F. staff. The "tendency on the part of staff departments to centralize at these headquarters much work which should not be handled here, a tendency which, if unchecked, will produce serious consequences as the A.E.F. grows" had to be stopped. Brewster was charged "to put a check on such improper expansion of . . . staff departments . . . [and] to prevent the creation of bureaus modeled on . . . the War Department."⁸ Pershing was determined that activities not requiring general staff supervision should be transferred to the L.O.C. staff.

On the last day of the year, Brewster submitted his findings to Pershing. After a detailed analysis of the function and composition of each department on the A.E.F. staff, the Inspector General recommended that the Quartermaster, Engineer, Ordnance, and Medical departments be transferred to the L.O.C.

The Gas Service and Aviation Service were to be retained at A.E.F. headquarters because of their combat roles. Also to remain at Chaumont with Pershing were the administrative sections: Adjutant General, Inspector General, and Judge Advocate General.⁹ Pershing now had a detailed staff study which reinforced his growing belief that the logistical functions of the A.E.F. should be separate from his headquarters, but under the control of one agency which had to be responsible for all A.E.F. logistics.

On December 21, a memorandum was circulated among the staff departments which attempted to correct an oversight of General Orders No. 71. This memorandum defined the relationship of the technical department chiefs on the A.E.F. staff to those on the L.O.C. staff. The memorandum stated that the ordinary control of staff departments by their chiefs would be limited "to such supervision and instruction of their subordinates, as, when once assigned, may be necessary to ensure efficiency, and to the allotment of material in general to the L.O.C." Once their personnel were assigned to the L.O.C., the men and material were to be "considered as at the disposition of the [L.O.C.] commander". . . and it follows that orders affecting

the [L.O.C.] . . . should be given through the recognized channels [A.E.F. general staff]". This applied equally to the Transportation Department and to the various combat units then in France. "The object [was] to secure coordination and cooperation in every detail between the staff departments . . . and in their relationships to the general staff."¹⁰ Attempting to get the day-to-day logistical operations out of the A.E.F. staff, this memorandum placed the responsibility for coordination of all logistical activities, except transportation, upon Kernan, the L.O.C. commander. While it would be some time before the technical chiefs gave up many of their duties to their counterparts on the L.O.C. staff, the fact remains that the first attempt to decentralize the logistical burden on the A.E.F. staff had occurred.

In January, the British agreed to commit a portion of their tonnage to carry six divisions of the A.E.F. from the United States to France. The troops were to be trained in the British sector. Pershing saw this effort as one in which "the British were bargaining for men to fill their ranks and we were trying to get shipping to carry

over our armies."¹¹ The results of this program were twofold: first, men and material were arriving at a faster rate than projected in the priority schedule; and second, the ratio of combat to L.O.C. units, which had been carefully worked out to assure continued support, was disrupted.

Port conditions had not improved significantly. The Artemis, a ship loaded with over 300 tons of desperately needed steel, was returned to the United States still carrying its precious cargo. Poor control of the port operations and a ballast shortage in France were the causes of this mistake. The general officers and staffs that Pershing had decided to appoint to control port and base section operations had not yet taken control of the situation. Even when they did, the general officers initially had their hands tied in dealing with the transportation officials.¹² Turn-around times for the cargo ships was still too slow. While some progress had been made and the average time was down from 109 days in November to 92 days, the rate was too high to meet the demands of supplying and transporting the A.E.F. to France. The increase in the number of troops to be supported offset the fact that cargo tonnage available for the A.E.F.

had increased from 94,000 tons in July to 662,000 tons in December.¹³ Another shortage, that of railway cars in France for A.E.F. use, added to the port congestion. The turn-around time for a car sent to the front from the port was ten to twelve days.¹⁴ This time also had to be reduced.

With the increase in troop strength from the British "six division" program, port congestion became a more critical problem which required immediate solution. Pershing cabled the War Department that "the general situation at our ports is becoming serious. We are not able to handle transports quickly enough to get full service from the limited amount of tonnage" available to the A.E.F. Pershing gave four reasons for the congestion: first, failure of War Department supply bureaus to forward to France the items requested for improving dock facilities; second, shortage of railway cars to move supplies in the ports; third, lack of control by the A.E.F. of cargo ship destinations; and fourth, the shortage of ballast. To improve the conditions, Pershing stated he intended to ask the French to increase the number of berths available to the A.E.F. in the ports being used. He also asked the War Department to change the

priority of shipment from lumber for dock construction to railroad cars to help carry supplies from the ports to the depots in the interior of France. Admiral Sims agreed to have the U.S. Navy escort vessels to ports designated by the A.E.F. headquarters. This relieved congestion and reduced turn-around time for the vessels. Ballast remained a problem, and the use of water was considered as a possible solution.¹⁵

Three days later, Pershing wrote Clemenceau requesting French assistance in solving the congestion problem in the A.E.F. ports. Pershing asked that the principal port of St. Nazaire be completely turned over to the A.E.F. as the channel port of Le Havre was under British control. Pershing also asked that additional berths be made available to the A.E.F. in the ports of Bordeaux, La Pallice, and Brest. A request was made that additional cargo handling equipment be made available for A.E.F. use in these ports. Because many French officials had been less than helpful, Pershing asked that only reliable French officials be assigned to the ports to ensure better coordination of the A.E.F. and French facilities. A request for additional storage space in the ports was included in the letter. Lastly, Pershing sought

that the ports under A.E.F. control be placed under etat de siege, or martial law, in order to enforce the regulations necessary to get the men and material off the ships quickly.¹⁶

On January 16, Clemenceau responded to Pershing's letter. Generally promising his personal attention to all of Pershing's problems, Clemenceau proceeded to answer each of Pershing's requests. First, Clemenceau told Pershing that the British did not control Le Havre and used only nine of forty berths. In addition, it would be embarrassing to the French government if it turned over a French port to the A.E.F. Additional storage space in the ports would be available through the Ministry of Public Works which had been asked to assist Pershing. Expressing surprise over difficulties with French officials, Clemenceau said, "I can assure you . . . that if you furnish me with any information regarding fault in the operation of one of my Service, I will take the necessary action.." He added action would be taken only after an inquiry. Clemenceau notified Pershing that prior to his letter, the French Government had placed the ports under the provisions of the law of August 9, 1849. Thus the ports were subject to martial law, but it was exercised by

French military officials. To assure better cooperation with the A.E.F. the French established a Regional Mission which attached officers to the office of each Base Section commander.¹⁷ While not meeting all of Pershing's requests, Clemenceau did what he could to assist the A.E.F.

Pershing was appreciative of the French assistance and wished the War Department were more cooperative. He was again complaining that the supply departments were not sending the material requested and only a portion of the request railway equipment. Pershing seldom considered that the War Department was working not only under the constraints imposed by the shipping shortage, but also trying to make sense out of the various and contradictory requests made by the A.E.F. as its situation changed. Fortunately, the General Purchasing Board had been able to purchase over 1,000,000 tons of material in Europe during the first six months compared with only 350,000 tons delivered by transport from the United States.¹⁸

On January 13, Headquarters of the L.O.C. was moved from Paris to Tours, located along the railroad lines.¹⁹ This placed the headquarters in a central location so that it could effectively

control and supervise the various activities of the L.O.C. An extended debate with the A.E.F. headquarters over the location of the L.O.C. headquarters had finally been resolved with the selection of Tours instead of Chaumont.

As another attempt to reduce the tonnage required to support the A.E.F., a Salvage Service was organized as a part of the Quartermaster Corps on January 16.²⁰ What had once been a novelty in military activities had now become an economic necessity by the repair of equipment and reduction of waste.²¹ The first Salvage Service depot was opened at St. Pierre-des-Corps, a suburb of Tours, only a few days after the L.O.C. headquarters had moved.²²

On January 17, Pershing reviewed the logistical situation in a letter to Secretary of War Baker. Considering the shortage of railway cars extremely serious, Pershing stated that as repair personnel arrived to put the Belgian locomotives that the A.E.F. had acquired and the unserviceable French railroad cars into operation, the A.E.F. would be able to keep ahead of its transportation requirements. The Navy had now agreed to direct vessels to the correct ports and the ballast problem temporarily

had been solved by the French. If the War Department did not interfere with the A.E.F.'s railway operations by placing it under the Corps of Engineers, as had been suggested, Pershing felt that the logistical situation would continue to improve.²³ At least as long as he devoted his personal attention to the problem.

Four days later, Pershing and Atterbury visited the French Under Secretary for Transportation, Claveille, in an attempt to get the French to agree to place the control of dock and rail facilities in the ports under one French official. Claveille agreed, but the change did not take place immediately. He also promised better cooperation with the A.E.F. in its attempts to obtain more railroad cars, but he was adamant in his refusal to allow the A.E.F. to assume control over French locomotives and freight cars for independent A.E.F. operations. Only one train was to be operated by the A.E.F. at this time. It travelled between Chaumont and Tours each day.²⁴ Numerous attempts were made to improve the material and manpower situation of the A.E.F.'s logistical system, but without major breakthroughs. Only a well organized system could make the most out of the limited assets.

Reorganization Of The Logistical System

A circular letter was sent to each staff section of the A.E.F. headquarters on January 11 by Pershing. It sought suggestions on improvements which should be made in the A.E.F. staff system. Pershing stated that the "single purpose of this organization is to have the duties of each staff department, including the general staff, so simply defined and so thoroughly coordinated" that it could meet the requirements of directing and supplying the A.E.F. both in the preparation for and conduct of combat operations. All input from the sections went directly to Pershing through his aide, Colonel Carl Boyd.²⁵

Prior to submission of suggestions to Pershing, many ideas were discussed. At this time, Colonel Logan, chief of the Administration Section of the General Staff, visited Tours to discuss L.O.C. problems and to discuss his ideas on reorganization with Hagood. On February 4, Hagood received the suggestions of Colonel George Van H. Moseley, a member of the Coordination Section. Moseley and his boss, Colonel W. D. Conner, believed that the Administration and Coordination Sections should be combined for better efficiency. Moseley also felt

that all the technical chiefs and the D.G.T. should be transferred to the L.O.C. and placed under Kernan. Only the general staff sections and the military sections would remain at Chaumont with Pershing's headquarters. Moseley thought that the L.O.C. should move its headquarters to Chaumont to be closer to Pershing when he moved forward during combat operations.²⁶

Hagood replied to Moseley's suggestions on the following day. Hagood stated that Moseley's and Logan's general ideas were the same, but there were several essential differences. Logan wished to see the Administration and Coordination Sections separate and the staff organized along the lines of the French general staff system with four bureaus. Moseley, on the other hand, was for combination of the sections and wanted a staff organized along the pre-war United States staff organization with Assistant Chiefs of Staff and more authority to the bureau chiefs.²⁷

Although there were many points of disagreement over major and minor problems, Hagood, Moseley, Logan, and Kernan all agreed that the D.G.T. could not be independent if the logistical system was to function effectively. Hagood was enthusiastic about the possibilities of Moseley's idea of moving the

bureau chiefs to the L.O.C., but he saw no advantage to moving the L.O.C. to Chaumont. Tours was centrally located and close to many important L.O.C. facilities. If this organization were to be adopted, Hagood stated that the L.O.C. would attempt to coordinate the various agencies by decentralization and by "making the different Bases and Sections practically the same as geographical departments" in the United States. With suitable staffs to coordinate the local actions in each section, this would be a means of covering "the whole ground without everything having to go through the narrow neck of one bottle."²⁸

Almost all the departments recognized that the extreme centralization of control had become unwieldly and not conducive to the interests of the A.E.F. The input provided to Pershing indicated a great diversity of opinion and practice which existed among the various supply chiefs about the degree of personal responsibility assumed and methods employed in the details of supply. It appeared that for decentralization to work, all logistical functions - procurement, storage, transportation, and distribution - would have to be placed under one agency which combined overall

responsibility for A.E.F. logistics with the authority to enforce its directives.²⁹

Colonel Johnson Hagood was selected as the senior member of a board of officers which was to consider the desirability of changing the A.E.F. staff organization. The board was provided with the replies to Pershing's January 22nd memorandum and the Inspector General's report completed in December. Encouraged to seek out its own information, the board sought ideas through interviews with interested department chiefs.³⁰ Pershing stressed the need for the board to work quickly, but thoroughly.

Membership on the board was limited to five members, but the talent was the best. In addition to Hagood, the board consisted of Colonel Avery D. Andrews, Transportation Department; Lieutenant Colonel Frank R. McCoy, Secretary to the General Staff; Lieutenant Colonel Robert D. Davis, A.E.F. Adjutant General; and Major Samuel F. Wetherill, Jr., a reserve quartermaster officer.³¹ Colonel Andrews, a West Point classmate of Pershing, had served on the staff of General Schofield and left the service prior to 1900. He had gone into the banking business in New York. Upon his arrival

in France, he had been appointed as the Principal Assistant and Military Advisor to Atterbury. Lieutenant Colonel McCoy was a cavalry officer who had served with Teddy Roosevelt and Leonard Wood in the Rough Riders. Lieutenant Colonel Davis was an infantry officer considered as "one of the best [officers] the Army ever had in peace or war." Major Wetherill was a young officer fresh from civilian life with the title of "Efficiency Expert".³²

Before deciding what should be done, the board agreed it should define its task. It decided it should deal with three questions. First, what changes, if any, should be made in the administration of supply to relieve Pershing from its direction and to place it under the direct and complete responsibility of some agency. Second, what changes, if any, should be made in the general staff organization to produce greater efficiency and greater harmony in staff relations. Third, what further changes, if any, should be made as a result of the answers to the first two questions.³³

With these guidelines the board began its meetings in the quarters of McCoy at Chaumont. In addition to studying the written reports submitted to Pershing, the board called witnesses from the

principal members of the A.E.F.'s general, administrative, and technical staffs and Colonel A. A. Bjornstad, one of the directors of the A.E.F. staff school at Langres. All agreed that the present organization needed revision, that responsibilities were not clearly defined, and that Pershing should not be burdened with logistical concerns. However, all disagreed on what should be done. The supply chiefs were all opposed to moving away from Chaumont and losing direct access to Pershing. Atterbury, quite naturally, offered the most radical suggestion. His idea was to take the entire logistical system and remove it from military control. Placed under the management of a business man, the system would then be managed in accordance with business principles.¹⁸

Working around the clock, the Sargent Board completed its findings in four days and submitted its recommendations to Pershing on February 5. The recommendation was based upon the assumption that

the most important single question presented to it was the necessity for providing a single and direct line of responsibility for all matters of supply, and, at the same time, to utilize to the fullest possible extent the services of the experienced and able Chiefs of the Administration and Technical Services who are now on the Staff of the Commander-in-Chief.¹⁹

The board recommended that the L.O.C. be reorganized and redesignated as the Services of the Rear (S.O.R.). The S.O.R. was charged with all A.E.F. supply responsibilities. To accomplish its duties, the chiefs of the technical services, without any change to their title or responsibilities, were to be reassigned to the staff of the S.O.R. to perform the same duties in respect to procurement, storage, and transportation. In other words, the Chief Quartermaster, Chief Engineer, Surgeon General, Ordnance Chief, Signal Corps Chief, Air Service Chief, Gas Service Chief, Director General of Transportation, and Provost Marshal were all added to the L.O.C. staff and renamed the S.O.R. The only departments which remained with Pershing were the general staff sections, the Adjutant General, the Inspector General, the Judge Advocate General, and the Chief of Tank Corps.³⁶

General Staff organization had been the second question considered by the Hagood Board. It was decided that an Assistant Chief of Staff was required to assist the Chief of Staff and to make decisions in the Chief of Staff's absence. The old designation of administration, intelligence, operations, coordination, and training sections was dropped.

Instead, the sections were to be known as first section, General Staff, or G-1 for administration; second section, G-2 for intelligence; third section, G-3 for operations; fourth section, G-4 for coordination; and fifth section, G-5 for training. To assist the general staff sections at Chaumont, the technical chiefs moving to Tours were allowed to appoint a liaison officer to remain in Chaumont.³⁷

Finally, the Hagood Board made some general recommendations. One was the S.O.R. headquarters remain at Tours where it could more effectively oversee S.O.R. facilities. To bring the entire logistical system under one agency, it was also recommended that Dawe's General Purchasing Board be made a part of the S.O.R. Concluding the report, the board stated that it realized

its recommendations involve the creation of an enormous business machine which will include within itself the entire service of the rear, in the organization and operation for which the highest form of specialized business methods, and the ablest and most experienced personnel will be essential for its successful operation...The board considers, however, that the necessity for so centralizing responsibility and control of the service of the rear, and removing it from general headquarters has been amply demonstrated. . . .³⁸

Separation of the technical chiefs was the most radical recommendation made by the Hagood Board; and it was the one most resisted. Somehow the technical chiefs had to be brought into an organization without feeling that they had been demoted by removal from the presence of Pershing. It was important to ensure that the powers and responsibilities of the bureau chiefs were not impaired and that they have the same sense of mission that they had in Chaumont. In effect, the Hagood Board made the Commanding General, S.O.R., Major General Kernan, the Chief of Staff for supply with direct and complete responsibility for maintenance of the logistical system of the A.E.F.³⁹

An important part of the board's recommendation was the establishment of the G-1 and G-4 sections of the general staff as part of the S.O.R. Only a small liaison group from each section was to be left at Pershing's headquarters. For some reason, when the recommendations of the board were approved, this change did not take place.

Further Work of the Hagood Board

Pershing approved the findings of the Hagood Board on February 14, and sent the board a letter

authorizing it to continue its study by conducting a tour of the S.O.R. facilities to include its headquarters, the regulating station at Is-Sur-Tille, the ports of debarkation, and other locations which the board wished to visit. Pershing directed that the board look into the control of light railways, operation of regulating stations, control of cables to the United States, status of port construction, and relations between the Quartermaster Corps and Transportation Department with reference to their duties in construction. The board was told that the "essentials of the organization of the service of the rear are the procurement and forwarding of necessary supplies for the troops at the front." To ensure that this was accomplished, it was necessary that the "line of responsibility of staff departments should be clearly defined as possible and the control by the general staff should be to the extent of insuring expeditious and promptness in carrying out the purpose of the organization."⁴⁰

While Hagood and his board began their inspection trip, Pershing published the initial recommendations of the board as a new organization

for the A.E.F. staff on February 16. General Orders No. 31 revoked General Orders No. 8, the original staff organization with its additions made as needed during the first six months in France. Now a completely different organization existed with a single agency responsible to Pershing for the entire logistical system. The Line of Communications ceased to exist and the Services of the Rear became the A.E.F.'s logistical organization.⁴¹ While this change took place in the middle of February, some of the technical departments had not moved to Tours as late as March.

During the transitional period while the Hagood Board was making its study and the S.O.R. was beginning to absorb the technical services, Pershing remained active in addressing logistical problems. In a letter to Admiral Sims, Pershing explained the problems in the ports as mainly "some difficulty in evacuating our ports by rail, due to a shortage of rolling stock, but when the five or six thousand car repair men . . . arrive, they will start[on] thirty thousand French railway freight cars now out of service."⁴² The establishment of the S.O.R. did not solve the critical equipment and material shortages of the logistical system; it only assured the central direction of

supply agencies and one organization was responsible for its success or failure.

Two days later Pershing wrote the Chief Engineer about the status of warehouse construction in the ports of Bassens and St. Nazaire. Pershing desired that all construction projects be reviewed, and only the most necessary continued. The construction units freed by the work stoppages were to be directed to assist in the construction of additional warehouses in the vicinity of St. Nazaire and Bordeaux. Pershing considered this action imperative and called for an immediate meeting with the Chief Engineer to discuss his plan.⁴³

Pershing also had to deal with Atterbury during this time. On February 20th, in response to a cable from Atterbury direct to the War Department, Pershing wrote:

Owing to the confusion and misunderstanding that has resulted in some cases from your cabling direct to the United States regarding transportation, the Commander-in-Chief directs that hereinafter you send no more direct cables but submit all proposed cables to these headquarters for transmission or action. Acknowledge.

Atterbury wrote Pershing asking for a reversal on the ban on direct communication with the War

Department. Atterbury said that both he and Felton had greatly benefitted from the cables.⁴⁴ What Atterbury failed to understand was that he could continue to cable the United States, but Pershing, as A.E.F. commander, would approve all cables to the War Department. Pershing was beginning to lose his patience with Atterbury.

On February 25, the Garden Service of the Quartermaster Corps was established to help reduce the tonnage being used between France and the United States.⁴⁵ The Garden Service provided technical direction, land, tools, and seeds to units who were to work gardens in cultivatable land in their training areas.⁴⁶ While the earlier plan to bring farmers to France to cultivate French land had been discarded, the Garden Service was a much more realistic program. Each unit was tasked to establish gardens which were to be turned over to incoming units when they departed the training areas. As the tempo of the war increased and units moved from one area to another frequently, the objectives of the Garden Service were not attained even though some tonnage was saved.⁴⁷

Port conditions at the end of February were still in bad shape. Lack of modern cargo unloading

equipment was still a major cause of delays, as was the railway car shortage. While 8,000 tons of cargo were being discharged at the A.E.F. ports each day, only 3,000 tons were being removed to the depots in the interior.⁴⁸ Thus, the great demand for warehouse construction in the port areas. But this was only a temporary solution. Eventually the supplies would have to be moved forward. Only when more railway cars were repaired or sent from the United States would the problem become manageable. Cables stressing the urgency of the situation were sent to the War Department.

At a meeting with Atterbury, Harbord, Conner, and the Chief Engineer, Pershing discussed port problems. At that time the A.E.F. had ten berths at St. Nazaire, four at Nantes, three at La Pallice, four at Rochefort, six at Bassens and four at Brest. While there still existed a serious need for railway equipment, stevedores, railway men, and unloading equipment, Atterbury and Conner were optimistic that the Transportation Department would meet the emergency if the tonnage estimates continued as scheduled and the Transportation Department received the equipment and men requested.⁴⁹

A conference was held in Paris with the Hagood Board, Atterbury, and Dawes about the new reorganization of the logistical system. Atterbury was adamant in his opinion that it would be a grave mistake to turn over the railway service to the S.O.R. Pointing to the British system, Atterbury maintained it would be disastrous for the A.E.F. to let the military control the separate A.E.F. railway system. He felt the Transportation Department should be free of the "arbitrary interference" of the military commanders.⁵⁰ Atterbury argued for an independent logistical system run on business principles.

Dawes, also a civilian businessman, took the opposite view. Dawes saw the problem not from the individual point of view of a part of the logistical system, but from the perspective that the military effort was a big corporation in which every part had to cooperate to the maximum under a single guiding hand to accomplish its purpose. Considering the military corporation was older than the business corporation, Dawes believed that it was the only organization built to conduct war. The force behind military operations was not what the cost would be, but being able to "get a certain thing

at a certain place at a certain time". Money was of no consideration except as a means to that end. Dawes saw the role of the civilian businessman as an advisor to the military on the most efficient means to accomplish the military goals. Once the advice had been given and either accepted or rejected, it was the duty of all concerned to see that the mission was accomplished. Dawes argued that it would be the height of folly to place a business man in charge of any military operation, whether it be the conduct of operations at the front or the supplying of troops in the rear.⁵¹

Upon completion of its inspection tour, the Hagood Board reassembled at Chaumont on Wednesday, February 27, and remained in constant session until Friday when it completed its report. The major problem causing disagreement was what the relationship of the Quartermaster Corps and the Transportation Department should be to ensure coordination of construction efforts. A definite position was not worked out by the board.⁵²

On March 1, the Hagood Board submitted its further recommendations to Pershing. Its first suggestion was that General Orders No. 31 need clarification and emphasis to get all the technical

department chiefs moved to Tours immediately. The board recommended that the supply function be divided into three parts: construction, transportation, and supply. Each part was to remain separate from the other two areas. General supervision of labor, material, and transportation was to be the responsibility of the G-4 section of the general staff. The staff was to issue only broad policies and to leave the day-to-day problems to the S.O.R. It was recommended that the policy of all cables to the War Department must receive A.E.F. headquarters approval be continued. Last, the board recommended the term Service of the Rear be changed back to Line of Communications. "There is a very general feeling that the term Service of the Rear implies a service which tends to lower those in that service in the estimation of those at home."⁵³

On the following day, Pershing met with the board and expressed some dissatisfaction with the separation of the construction and transportation activities. Pershing wanted to ensure that functions were clearly defined and no conflicts existed. The board had not been able to agree on a recommendation which would meet this criteria. Pershing trusted his subordinates to do their jobs,

but he wanted to make certain that the job was stated clearly and that the subordinate had the authority to meet its duties.⁵⁴ When the Hagood Board members departed after the meeting to return to their jobs, no one was sure what would result from the further findings of the board.

Major General Kernan returned to Tours from Chaumont on March 9 with a corrected copy of General Orders No. 31. The general order included many of the recommendations of the Hagood Board. The term Service of the Rear had been dropped; but the new term, and the one to remain until the end of the war, was not Line of Communications but Services of Supply (S.O.S.). To resolve the problem of combining all construction and all transportation, Pershing decided to combine both of these areas under the Service of Utilities which consisted of four parts: Transportation Department, Motor Transport Service, Construction, and Forestry. Atterbury, who had been removed from direct access to Pershing by the first General Orders No. 31 now found himself twice removed. Not only did this irritate him, but Atterbury's subordinate in charge of Light Railways, Brigadier General William C. Langfitt, was promoted to Major

General and placed in charge of the Service of Utilities. While not the ideal situation from the D.G.T.'s perspective, the new organization brought control and coordination over the major areas of supply, construction, and transportation.⁵⁵

Completion Of The Logistical System

As the supply agency, the Services of Supply was tasked to receive, transport, store, and distribute everything the A.E.F. needed and to care for the hospitalization of the sick and wounded. Only sound business administration and decentralization of authority could make the system work. The S.O.S. commander was to have broad discretionary power and the local commander of the section also had to have a certain independence of action. Because of the diversity and enormity of activities and the large territory embraced by the S.O.S., decentralization in all matters was demanded.⁵⁶ But the problem remained of how the S.O.S. was going to maintain overall control. The S.O.S. commander had an unequivocal definition of his job and the authority to accomplish it. General Orders No. 31 had been written not with the intention of tying "his hand or to limit him

in methods and means. He was told what to do but not how to do it!"⁵⁷ The attitude of the staff toward logistical organization had grown since June, 1917.

For the logistical system to work, three requirements had to be met. First, a clear definition of the responsibilities and the delegation of the authority to accomplish these duties was needed. General Orders No. 31 provided this. Secondly, the various supply and technical agencies had to be smoothly incorporated into the S.O.S. so the entire system could be coordinated and controlled, but without centralizing authority. Last, as had been the case with the other organization changes, a general order was required which provided information to the acting units as to what the supply system consisted and what the procedures were for obtaining the desired support. The last two requirements for getting the logistical system to work had not been accomplished.

Hagood, as the Chief of Staff of the S.O.S., was in an important position to ensure that the various agencies of the S.O.S. were smoothly integrated into the system without centralization of authority. To accomplish this integration and to ensure

that subordinates understood their roles in the S.O.S. Hagood implemented the following S.O.S. general staff procedures:

The training at West Point for mathematical precision, the temptation to work out puzzles, the long-established custom of our finance department to look for lost pennies, the habit of passing up for decision of higher authority all interesting or knotty problems, no matter how inconsequential, all indicated that certain fundamental principles must be firmly established for the government of myself and my General Staff assistants if we were to find time in each twenty-four hours to handle the big problems and let the little ones go. These principles were:

First: Rank and authority should not be confused with knowledge. No man should set his authority against another man's judgment. The General Staff was to adjust differences, and when there were no differences then the General Staff was not to act. If the issue could be boiled down to a matter of opinion or judgment, I took the opinion or judgment of the man on the job - not that of the General Staff. The same rule applied to myself. If after a full discussion I could not agree with a bureau chief or other responsible authority upon a matter lying wholly within his department, I yielded my judgment to his and let him do it his way.

Second: When intelligent men differed on matters of minor importance, a minor official had to decide between them.

Third: No subordinate officer should make a final unfavorable decision on any matter which a bureau chief or section commander considered vital to his interests. In case of such an unfavorable decision, whether over my signature or over that of one of my assistants, it was the duty of the bureau chief or the base commander concerned to bring the matter to my personal attention, either by interview, telephone, telegraph, or letter. The question was then reopened and discussed upon its merits, without prejudice. This took the sting out of all General Staff decisions, and although a number of appeals were made I cannot remember that during the entire term of my service as Chief of Staff there was a single case of this kind that was not finally adjusted to the satisfaction of all concerned.

Fourth: No order, memorandum, instructions, or plan could be changed or issued by the General Staff without first submitting it in final form to the man who originated it. If that man didn't like it and was unable to adjust it with the General Staff, he had a right to appeal to me.

Fifth: The bureau chiefs were required to see that there was no unnecessary delay in getting General Staff approval of their projects. After a reasonable time had elapsed without getting action on a matter of importance, the bureau chief was required to bring this delay to my attention, and if he had failed to do so responsibility for the delay rested with him.

Sixth: Complete responsibility was placed upon the bureau chiefs and section commanders for the initiation and prosecution of all that was needful within their respective spheres unless they were specifically told otherwise. Ordinarily in the military service a subordinate is given a definite mission by his superior and he is not responsible for anything except the accomplishment of his mission. In building up the S.O.S. no one had sufficient grasp of the whole situation to parcel out the work to subordinates. We therefore reversed the usual order, and after giving subordinates a general idea of their field of activity they were held responsible for doing all things needful to accomplish their purpose. That is, all powers not specifically reserved for higher authority were delegated to subordinates. No bureau chief or section commander could stand around wondering if THEY were to look after this or that. If he had heard nothing to the contrary, he was "THEY".⁵⁸

Thus the various departments were incorporated into the S.O.S. without limiting their authority or responsibility.

Pershing was still undecided how best to deal with Atterbury. Dawes wrote Pershing in early March recommending that Atterbury not be relieved because of the adverse affect this would have in the United States where Atterbury was still held in high regard. Dawes described to Pershing how he had approached Atterbury and offered criticisms of the Transportation Department. Atterbury had

initially been hostile until he came to understand that Dawes was trying to assist him and that Dawes was also open to Atterbury's comments on the work of the General Purchasing Board.⁵⁹ In this way, Dawes hoped to get Atterbury to be a more willing subordinate and helping, rather than hindering, the A.E.F. effort. Pershing was so concerned with Atterbury that he asked Hagood what he felt of the Service of Utilities organization and its affect on the Transportation Department. After being reassured by Hagood that it had been a wise decision, Pershing said that it would be good for the Transportation Department because it had always been too independent and must come to realize that it must become a member of the team in working toward A.E.F. goals.⁶⁰

Atterbury's seeming demotion was still a source of confusion. Pershing wrote Kernan that although he did wish Atterbury to subordinate his activities to the S.O.S. program, Pershing did not intend to reduce Atterbury's statue in the eyes of the French. The Transportation Department was to be "independent as it was before, except for its proper coordination with the other staff departments".⁶¹ Further confusion led Kernan to

write Pershing to determine exactly what was Atterbury's position. In response, Pershing wrote "General Atterbury is in charge of a large subdivision of your office, but he possesses no powers which you do not possess over and above him".⁶² This ended the discussion about the Transportation Department's role in the S.O.S. at that time.

General Orders No. 44 was published on March 23. It served the same dissemination of information role that General Orders No. 43 and 73 had served for the L.O.C. organization. The duties and authority of the S.O.S. commander were stated, the procedure for procuring supplies explained, and the special duties and authority of the base commanders were discussed.⁶³ This general order completed the third requirement to make the S.O.S. work. The S.O.S. was now organized; all elements were integrated into the organization without centralizing authority; and the system and procedures were explained to the rest of the A.E.F. Under this organization the "transaction of business soon crystalized into an orderly and almost automatic procedure which greatly assisted in fixing responsibility and was conducive to

that expedition of decision and action vital to the efficiency" of A.E.F. combat operations.⁶⁴

Through many months of trial and error, Pershing slowly developed the Services of Supply. While men and material would constantly be in demand in the S.O.S., the final A.E.F. logistical organization had been developed. Minor internal changes would take place, but the S.O.S. commander remained responsible for all phases of A.E.F. logistics. This system evolved none too soon, for on March 21 the Germans launched their first major offensive of 1918 and the A.E.F. would soon be tested in combat.

NOTES

¹Pershing, My Experiences, I, 268.

²G. C. Shaw, Supply in Modern War, 83.

³Bullard, Personalities, 116.

⁴Thomas G. Frothingham, The American Reinforcement in the World War, 110.

⁵Coffman, Hilt, 137.

⁶Hagood, Services of Supply, 78-82.

⁷Ibid.

⁸Letter No. 4773 from the Adjutant General to the Inspector General dated December 15, 1917, United States Army in the World War, II, 103.

⁹Inspector General Report dated January 6, 1918, United States Army in the World War, II, 107-116.

¹⁰Memorandum No. 148 dated December 21, 1917, United States Army in the World War, II, 124.

¹¹Pershing, My Experiences, I, 269.

¹²General Headquarters' War Diary Entry 190-e-t dated December 16, 1917, A.E.F., Records Group 120, National Archives.

¹³Leonard P. Ayers, The War With Germany: A Statistical Summary, 44. The average turn-around time later in the war was 75 days for cargo ships and 40 days for troop ships.

¹⁴Slade, French Railroads, 22.

¹⁵Cable P-445-S from Pershing to War Department dated January 5, 1918, United States Army in the World War, II, 138-139.

¹⁶Letter No. 1706 from Pershing to Clemenceau dated January 8, 1918, United States Army in the World War, II, 149-150.

¹⁷Letter from Clemenceau to Pershing dated January 16, 1918, File No. 756, C-I-C Correspondence, G.H.Q., A.E.F., Records Group 120, National Archives.

¹⁸Pershing, My Experiences, I, 227.

¹⁹U.S. War Department, Order of Battle, I, 42.

²⁰General Orders No. 10 dated January 16, 1918, United States Army in the World War, XVI, 168-171.

²¹Harbord, American Army, 500.

²²Risch, Quartermaster, 676.

²³Pershing, My Experiences, I, 295-296.

²⁴Ibid., 229.

²⁵Letter No. 77 from Colonel Carl Boyd to Chief of the A.E.F. Air Service, United States Army in the World War, II, 173-174.

²⁶Hagood, Services of Supply, 129-131.

²⁷Ibid., 132-133.

²⁸Ibid.

²⁹Final Report of Assistant Chief of Staff G-4 dated April 5, 1920, United States Army in the World War, XIV, 64.

³⁰File No. 341 letter from Harbord to Hagood dated February 8, 1918, United States Army in the World War, II, 199-200.

³¹Ibid.

³²Harbord, American Army, 213-214; Hagood, Services of Supply, 135-136.

³³Board Report No. 341 dated February 14, 1918, Subject: Proceedings of a board of officers convened by letter from the Chief of Staff, General Headquarters, A.E.F., February 8, 1918, United States Army in the World War, II, 204-206.

³⁴Hagood, Services of Supply, 137-138.

³⁵Ibid., 143

³⁶Board of Report No. 341 dated February 14, 1918, Subject: Proceedings of a board of officers convened by letter from the Chief of Staff, General Headquarters, A.E.F., February 8, 1918, United States Army in the World War, II, 204-206.

³⁷Ibid.

³⁸Ibid.

³⁹Hagood, Services of Supply, 143-145.

⁴⁰Letter No. 341 from Harbord to Hagood dated February 14, 1918, United States Army in the World War, II, 206-207.

⁴¹General Orders No. 31 dated February 16, 1918, United States Army in the World War, XVI, 216-225.

⁴²Letter from Pershing to Admiral Sims dated February 18, 1918, File No. 756, C-I-C Correspondence, G.H.Q., A.E.F., Records Group, 120, National Archives.

⁴³Letter from Pershing to Chief Engineer, Subject: Construction of Dock Facilities, dated February 20, 1918, File No. 756, C-I-C Correspondence, G.H.Q., A.E.F., Records Group 120, National Archives.

⁴⁴Letter from Atterbury to Pershing dated February 20, 1918, File No. 13054, C-I-C Correspondence, G.H.Q., A.E.F., Records Group 120, National Archives.

⁴⁵General Orders No. 34 dated February 25, 1918, United States Army in the World War, XVI, 233-235.

⁴⁶Risch, Quartermaster, 671-672.

⁴⁷Pershing, My Experiences, I, 336.

⁴⁸Ibid., 327.

⁴⁹Ibid., 328

⁵⁰Hagood, Services of Supply, 149.

⁵¹Dawes, Journal, I, 75-79; Hagood, Services of Supply, 149-150.

⁵²Hagood, Services of Supply, 151-153.

⁵³Board Report No. 341 dated March 1, 1918, Subject: Proceedings of a board of officers convened in accordance with instructions of the Commander-in-Chief dated February 14, 1918, United States Army in the World War, II, 224-226.

⁵⁴Hagood, Services of Supply, 153-154.

⁵⁵Ibid., 155-157.

⁵⁶Pershing, My Experiences, I, 321.

⁵⁷Harbord, American Army, 216.

⁵⁸Hagood, Services of Supply, 162-164.

⁵⁹Letter from Dawes to Pershing dated March 2, 1918.

⁶⁰Hagood, Services of Supply, 168.

⁶¹Library of Congress, Papers of John J. Pershing, Box 16, Letter from Pershing to War Department.

⁶²General Headquarters' War Diary Entry 302-c dated April 7, 1918, A.E.F., Records Group 120, National Archives.

⁶³General Orders No. 44 dated March 23, 1918, United States Army in the World War, XVI, 249-257.

⁶⁴Final Report of Assistant Chief of Staff G-4 dated April 5, 1920, United States Army in the World War, XIV, 65.

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